The Catalogue

FMP = *Flora of the Malay Peninsula* by H.N. Ridley (vols. **1-5**)

FMI = *Flora Malesiana, series I* (vols. **4-12**)

FMII = *Flora Malesiana, series II* (vols. **1-2**)

TFM = *Tree Flora of Malaya* (vols. **1-4**)

1. EQUISETACEAE

1.1.1 **Equisetum ramosissimum** Desf. ssp. **debile** (Roxb.) Hauke, **H26** 61, **M09** 209; herb of open sites and roadsides; Gg Ulu Kali and near Raub, Ph.

2. LYCOPODIACEAE

2.1.1 **Huperzia carinata** (Desv. *ex* Poir.) Trevis., **O02** 11; *Lycopodium carinatum* Poir., **T01** 8, **A12** 226; epiphyte or terrestrial; lowland forest, sometimes on limestone; Pn, Kl, Tg, Ph, Sp.

2.1.2 **Huperzia coralia** (Spring) Holub, **O02** 11; epiphyte; montane forest; Pk.

2.1.3 **Huperzia dalhousiana** (Spring) Trevis., **O02** 12; *Lycopodium dalhousianum* Spring, **A13** 228; epiphyte; lowland forest; Pn, Ph, Ml.

2.1.4 **Huperzia hippuris** (Desv. *ex* Poir.) Trevis., **O02** 14, Parris *pers. comm.*; once from Cameron Highlands, Ph.

2.1.5 **Huperzia nummulariifolia** (Blume) T.C. Chambers *& al.*, **O02** 17; *Lycopodium nummulariifolium* Blume, **T01** 11; epiphyte; on tree trunks in lowland and hill forest; Kd, Pn, Kl, Ph, Jh.

2.1.6 **Huperzia phlegmaria** (L.) Rothm., **O02** 18; *Lycopodium phlegmaria* L., **T01** 10; epiphyte; common on forest trees; widespread.

2.1.7 **Huperzia phlegmarioides** (Gaudich.) Rothm., **O02** 18, **P11**, **A12** 232, pendulous epiphyte.

2.1.8 **Huperzia phyllantha** (Hook.*f.* & Arn.) Holub, **O02** 18; epiphyte; lower montane forest; Pn, Kl, Pk, NS, Sp.

2.1.9 **Huperzia pinifolia** Trevis., **O02** 18, **P11**; *Lycopodium piscium* (Herter) Tagawa & K. Iwatsuki, **T01** 10; on trees or rocks.

2.1.10 **Huperzia serrata** (Thunb. *ex* Murr.) Trevis., **O02** 20; *Lycopodium serratum* Thunb. *ex* Murr., **T01** 7; terrestrial; dense forest above 1000 m; Ph.

2.1.11 **Huperzia squarrosa** (G. Forst.) Trevis., **O02** 21; *Lycopodium squarrosum* G.Forst., **T01** 9; epiphyte; on forest trees, including mangroves, to mid-altitudes; Kd, Kl, Pk, Ph.

2.1.12 **Huperzia tetrasticha** (Kunze) Holub, **O02** 22; epiphytic or terrestrial; Kl, Ph, NS.

Parris also [**P11**] includes two sp. nov. in her list.

2.2.1 **Lycopodiella caroliniana** (L.) Pic.Serm., **O02** 25; *Lycopodium carolinianum* L., **K46** 197; terrestrial; open sites on poor soils; Tg, Ph, Jh.

2.2.2 **Lycopodiella cernua** (L.) Pic.Serm., **O02** 25; *Lycopodium cernuum* L., **T01** 12; terrestrial; common in open sites on poor soils to 1200 m; widespread.

2.3.1 **Lycopodium casuarinoides** Spring, **O02** 36; terrestrial; montane forest; Kd, Tg, Pk, Ph, Ml, Jh.

2.3.2 **Lycopodium clavatum** L., **O02** 38, **P11**; terrestrial; mountains; Pk, Ph.

2.3.3 **Lycopodium platyrhizoma** Wilce, **W17** 150, **O02** 63; terrestrial; above 1300 m.

2.3.4 **Lycopodium volubile** G. Forst., **O02** 77, **P11**; terrestrial; Pn.

2.3.5 **Lycopodium wightianum** Wall. *ex* Grev. & Hook., **W17** 128, **O02** 77; terrestrial; mountain-tops at about 2000 m.

3. PSILOTACEAE

3.1.1 **Psilotum complanatum** Sw., **T01** 6; *Psilotum flaccidum* Wall.; epiphyte; on tree trunks in light shade.

3.1.2 **Psilotum nudum** (L.) P. Beauv., **T01** 5; *Psilotum triquetrum* Sw.; often epiphytic; on mossy tree trunks to mid-altitudes.

4. SELAGINELLACEAE

4.1.1 **Selaginella alutacia** Spring, **W24** 120; terrestrial; lowland and montane forest; Pk, Ph, Sl, NS, Ml, Jh.

4.1.2 **Selaginella argentea** (Wall. *ex* Hook. & Grev.) Spring, **W24** 121; terrestrial; lowland and hill forest, including limestone; Kd, Pn, Ph.

4.1.3 **Selaginella caulescens** (Wall. *ex* Hook. & Grev.) Spring, **W24** 121; terrestrial; forests; twice from Pk.

4.1.4 **Selaginella ciliaris** (Retz.) Spring, **W24** 122; poorly known.

4.1.5 **Selaginella cuprea** Ridl., **W24** 122; terrestrial; lowland to montane forest; Kl, Tg, Pk, Ph, Sl; endemic.

4.1.6 **Selaginella curtisii** Ridl., **W24** 122; terrestrial; only known from type, Gg Bujong Malacca, Pk; endemic.

4.1.7 **Selaginella delicatula** (Desv.) Alston, **W24** 123; terrestrial; often on limestone; Ps, Kd, Pn, Ph, Sl.

4.1.8 **Selaginella frondosa** Warb., **W24** 123; terrestrial; lowland forest; Kl, Pk, Ph, Sl, Jh.

4.1.9 **Selaginella griffithii** Spring, **W24** 123; terrestrial; only recorded from P. Langkawi.

4.1.10a **Selaginella intermedia** (Blume) Spring var. **dolichocentra** K.M. Wong, **W24** 125; terrestrial; hill tops and mountains; Pn, Pk, Ph, Sl, Jh.

4.1.10b **Selaginella intermedia** (Blume) Spring var. **intermedia**, **W24** 124; terrestrial; lowlands to mountain tops; Kd, Pk, Ph, Sl, NS, Jh.

4.1.11 **Selaginella longiaristata** Hieron., **W24** 126; Ml.

4.1.12 **Selaginella mayeri** Hieron., **W24** 126; terrestrial; from lowlands to highlands and on limestone; Pn, Pk, Ph, Sl, NS.

4.1.13 **Selaginella minutifolia** Spring, **W24** 127; terrestrial; lowlands and mountains; Kd, Ph, Sl.

4.1.14 **Selaginella mirabilis** Parris, ined., **P13** 6; Taman Negara, Ph; endemic.

4.1.15 **Selaginella morgani** Zeiller, **W24** 127; terrestrial; mountains; Pk, Ph; endemic.

4.1.16 **Selaginella ornata** (Hook. & Grev.) Spring, **W24** 127; terrestrial; mostly in hills and mountains; Pn, Pk, Ph, Sl, NS.

4.1.17 **Selaginella padangensis** Hieron., **W24** 128; terrestrial; lowland forests; Pk, Ph, Sl.

4.1.18 **Selaginella plana** (Desv.) Hieron., **W24** 128; terrestrial; few collections - Pn, Ph.

4.1.19 **Selaginella polita** Ridl., **W24** 129; terrestrial; mountains; Pk, Ph; endemic.

4.1.20 **Selaginella repanda** (Desv.) Spring; **W24** 129; terrestrial; Ps.

4.1.21 **Selaginella ridleyi** Baker, **W24** 129; terrestrial; known only from type; on rocks in stream, Mt Ophir, Ml; endemic.

4.1.22 **Selaginella rivalis** Ridl., **W24** 130; terrestrial; roadsides and tracks; Ph, Sl; endemic.

4.1.23a **Selaginella roxburghii** (Hook. & Grev.) Spring var. **roxburghii**, **W24** 130; terrestrial; lowland and hill forest; Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

4.1.23b **Selaginella roxburghii** (Hook. & Grev.) Spring var. **strigosa** (Ridl.) K.M. Wong, **W24** 131; terrestrial; lowland and hill forest; Kd, Ph, Jh; endemic variety.

4.1.24 **Selaginella scabrida** Ridl., **W24** 131; terrestrial; Ph; endemic.

4.1.25 **Selaginella selangorensis** Bedd. *ex* Ridl., **W24** 131; terrestrial; lowlands to mountains; Pn, Ph, Sl; endemic.

4.1.26 **Selaginella stipulata** (Blume) Spring, **W24** 132; terrestrial; mostly in the mountains; Tg, Pk, Ph, Sl, NS, Jh.

4.1.27 **Selaginella strigosa** Bedd., **W24** 133; terrestrial; mountain tops; Sl, NS, Jh; endemic.

4.1.28 **Selaginella wallichii** (Hook. & Grev.) Spring, **W24** 133; terrestrial; lowlands to mountains; Kd, Tg, Pk, Ph, Sl, NS, Jh.

4.1.29 **Selaginella willdenowii** (Desv.) Baker, **W24** 133; terrestrial; lowlands to mountains, including limestone; Kd, Pk, Ph, Sl, NS, Jh, Sp.

5. ADIANTACEAE

5.1.1 **Adiantum capillus-veneris** L., **H45** 600, **P19** 417; terrestrial or epilithic; exposed places in lowlands; north of Malaya.

5.1.2 **Adiantum caudatum** L., **H45** 599 in a small part, **H45** 638; terrestrial; once collected from Tasek Chenderoh, Pk.

5.1.3 **Adiantum flabellulatum** L., **H45** 603, **P19** 419; terrestrial; on rocks and banks in the lowlands; Pn, Pk, Ph, Sp.

5.1.4 **Adiantum fructuosum** Spreng., **T05** 127; large terrestrial fern; on shaded earth banks; Sp; naturalized from tropical America.

5.1.5 **Adiantum hispidulum** Sw., **H45** 603; terrestrial; on earth banks around Singapore; presumed native.

5.1.6 **Adiantum latifolium** Lam., **P19** 420; terrestrial; weed of lightly shaded places; naturalized from tropical America.

5.1.7 **Adiantum malesianum** Ghatak, **H45** 638, **C13** 207, **P19** 416; *Adiantum caudatum sensu* Holttum, **H43** 599 in the major part; common on limestone rocks; north of Malaya.

5.1.8 **Adiantum philippense** L., **H45** 598; on limestone in the north.

5.1.9 **Adiantum soboliferum** Wall. *ex* Hook., **H45** 598, **C13** 207; on limestone in the north.

5.1.10 **Adiantum stenochlamys** Baker. **H45** 602, **P19** 418; frequent on rocks near the sea; widespread.

5.1.11 **Adiantum zollingeri** Mett. *ex* Kuhn, **H45** 638, **C13** 207; *Adiantum caudatum* L. var. *subglabrum* Holttum, *nom. nud.*, **H45** 600; on limestone; Ps, Kd.

5.1.12 **Adiantum sp. aff. rhizophorum**, **H45** 638, **P11**; limestone; once from Gg Tempurong, Pk.

5.2.1 **Cheilanthes belangeri** (Bory) C.Chr., **H45** 591; terrestrial; in forest under light shade; in the north.

5.2.2 **Cheilanthes contigua** Baker, **Q01** 515; terrestrial; one collection at BM from Malaya, no exact location.

5.2.3 **Cheilanthes farinosa** (Forssk.) Kaulf., **H45** 592, **C13** 207, **P19** 413; terrestrial; at base of limestone outcrops; Bt Baling, Kd, and Bt Chintamani, Ph.

5.2.4 **Cheilanthes tenuifolia** (Burm.*f.*) Sw., **H45** 590, **P19** 412; terrestrial; common on banks and rocks in exposed places at low altitudes; widespread.

5.3.1 **Coniogramme fraxinea** (D.Don) Fée *ex* Diels, **H45** 589, **P19** 423; terrestrial; near streams in montane forest; Pk, Ph.

5.4.1 **Doryopteris allenae** Tryon, **H45** 638, **C13** 208; creeping fern; shady crevices in limestone; Pk, Sl; endemic.

5.4.2 **Doryopteris ludens** (Wall. *ex* Hook.) J.Sm., **H45** 594, **P19** 414; on limestone; Ps, Kd, Pk, Sl.

5.5.1 **Hemionitis arifolia** (Burm.*f.*) T. Moore, **H45** 596, **C13** 208, **P19** 427; on rocks, usually limestone; in the north.

5.6.1 **Pityrogramma calomelanos** (L.) Link, **H45** 593, **P01** 660, **P19** 424; terrestrial; open, disturbed ground at all altitudes; Kl, Pk, Ph, Sl, NS, Sp; naturalized from the Neotropics.

5.7.1 **Syngramma alismifolia** (C. Presl) J.Sm., **H45** 581 in part, **H46** 329; terrestrial; damp places in forests; widespread.

5.7.2 **Syngramma borneensis** (Hook.) J.Sm., **H45** 582, **H48** 332; terrestrial; in forest on mountain ridges; Gg Panti and Gg Ledang, Jh.

5.7.3 **Syngramma cartilagidens** (Baker) Diels, **H45** 583, **H48** 332; on wet shady rocks in forest streams; Ph, Sl, Jh.

5.7.4 **Syngramma coriacea** (Copel.) Holttum, **H48** 330; *Syngramma quinata auct. non* (Hook.) Carr, **H45** 580; terrestrial; in moist forest; Taiping Hills, Pk.

5.7.5 **Syngramma dayi** (Bedd.) Bedd., **H45** 582, **H48** 332; on exposed quartzite ridges; Pk, Sl; endemic.

5.7.6 **Syngramma minima** Holttum, **H45** 585, **H48** 332; on quartzite near the summit of Gg Panti, Jh; endemic.

5.7.7 **Syngramma wallichii** (Hook.) Bedd., **H48** 330, **P19** 422; *Syngramma alismifolia auct. non* (C. Presl) J. Sm., **H45** 581 in part; terrestrial; shady stream valleys in lowlands and hills.

5.8.1 **Taenitis blechnoides** (Willd.) Sw., **H45** 586, **P19** 437; terrestrial; common at forest edges and in plantations; widespread.

5.8.2 **Taenitis dimorpha** Holttum, **H45** 588, **P19** 439; terrestrial; dryish banks in mid-montane forests; Ph, Sl, Jh; endemic.

5.8.3 **Taenitis interrupta** Hook. & Grev., **H45** 587, **P19** 438; terrestrial; damp shady spots in lowland forest; widespread.

6. ASPLENIACEAE

6.1.1 **Asplenium affine** Sw., **P19** 286; *Asplenium spathulinum* J.Sm. *ex* Hook., **H45** 439; epiphyte and on rocks; shaded mountain valleys.

6.1.2 **Asplenium batuense** Alderw., **H45** 423, **P19** 271; climbing on tree trunks; damp forest to 1000 m.

6.1.3 **Asplenium borneense** Hook., **H45** 436; on rocks by streams to 1000 m; Pk, P. Tioman.

6.1.4 **Asplenium caudatum** G. Forst., **H45** 428, **P19** 276; epiphyte, sometimes on rocks; montane forest.

6.1.5 **Asplenium cheilosorum** Kunze *ex* Mett., **H45** 435; near streams; Cameron Highlands, Ph.

6.1.6 **Asplenium excisum** C. Presl, **H45** 439; on rocks in, and near, streams; Cameron Highlands, Ph.

6.1.7 **Asplenium grevillei** Wall. *ex* Hook. & Grev., **E01** 163; epiphyte; lowland forest; once from Temengor F.R., Pk.

6.1.8 **Asplenium longissimum** Blume, **H45** 427, **P19** 274; epiphyte, often on palm and bamboo stems; widespread.

6.1.9 **Asplenium macrophyllum** Sw., **H45** 431, **P19** 278; on trees and rocks; lowland and lower montane forest

6.1.10 **Asplenium musifolium** J.Sm. *ex* Mett., **H47** 149; *Asplenium nidus* L. var. *musifolium* (J.Sm. *ex* Mett.) Alderw., **H45** 419; epiphyte; lowland forest.

6.1.11 **Asplenium nidus** L., **H45** 419, **H47** 148, **P19** 267; common epiphyte; lowlands and mountains; throughout.

6.1.12 **Asplenium nitidum** Sw., **T03** 286; *Asplenium glaucophyllum* Alderw., **H45** 440, **P19** 287; epiphyte; lowlands and hills; common on oil palm in the south.

6.1.13 **Asplenium normale** D. Don, **H45** 436, **P19** 283; on rocks and mossy ground; montane forest at 750–1500 m.

6.1.14 **Asplenium paradoxum** Blume, **H45** 430, **P19** 277; on rocks and trees; lowland and hill forest.

6.1.15 **Asplenium pellucidum** Lam., **H45** 428, **P19** 275; on trees and rocks, including limestone; lowlands and hills.

6.1.16 **Asplenium perakense** C.G. Matthew & H. Christ, **H45** 429; epiphyte; montane forest; Taiping Hills, Pk & Fraser's Hill, Ph.

6.1.17 **Asplenium phyllitidis** D.Don ssp. **malesicum** Holttum, **H47** 153, **P19** 268; *Asplenium phyllitidis* D.Don, **H45** 420; on trees and rocks; lowlands and hills.

6.1.18 **Asplenium polyodon** G. Forst, **M57** 30, **P11**; *Asplenium adiantoides* (L.) C.Chr., **H45** 431, **C13** 207, **P19** 279; on rocks, often limestone; in the north.

6.1.19 **Asplenium robustum** Blume, **H45** 442, **P19** 288; epiphyte; montane forest.

6.1.20 **Asplenium salignum** Blume, **H45** 421, **P19** 270; on rocks at low altitudes, epiphyte in mountains.

6.1.21 **Asplenium scalare** Rosenst., **H45** 425, **P19** 272; on rocks or trees by streams; montane forest.

6.1.22 **Asplenium scolopendrioides** J.Sm. *ex* Hook.; **H45** 422; low-level epiphyte; lowland forest; Ph, P. Tioman.

6.1.23 **Asplenium scortechinii** Bedd., **H45** 420, **P19** 269; epiphyte; montane forest at 900–1800m; Pk, Ph.

6.1.24 **Asplenium sublaserpitiifolium** Ching, **H45** 441; once collected on P. Tioman at sea level.

6.1.25 **Asplenium subnormale** Copel., **H45** 437, **P19** 284; known from two localities; Sl, P. Tioman.

6.1.26 **Asplenium tenerum** G. Forst., **H45** 432 incl. var. *retusum* C. Chr., **P19** 280; epiphyte; lowland and montane forest.

6.1.27 **Asplenium thunbergii** Kunze, **H45** 634, **P19** 282; *Asplenium belangeri* (Bory) Kunze, **H45** 434; epiphyte found near the bases of trees; lowland and hill forest.

6.1.28 **Asplenium unilaterale** Lam., **H45** 438, **P19** 285; on rocks and stream banks; lowland and hill forest to 1200 m.

6.1.29 **Asplenium vittiforme** Cav., **P12** 28; *Asplenium squamulatum* Blume, **H45** 426, **C13** 209, **P19** 273; on rocks, including limestone; lowlands; Kl, Ph, Sl.

7. AZOLLACEAE

7.1.1 **Azolla pinnata** R.Br. ssp. **asiatica** R.M.K. Saunders & K. Fowler, **S06** 349; *Azolla pinnata* R.Br., **H45** 622; *Azolla pinnata* R.Br. var. *imbricata* (Roxb. *ex* Groff.) Bonap., **P19** 445; small free-floating fern; abundant in pools and rice-paddies; widespread.

8. BLECHNACEAE

8.1.1 **Blechnum finlaysonianum** Wall. *ex* Hook. & Grev., **H45** 445, **P19** 339; terrestrial; in forest shade to 500 m; widespread.

8.1.2 **Blechnum fraseri** (A.Cunn.) Luerss., **H45** 635 incl. var. *philippinense* H. Christ, **P19** 406; terrestrial; upper montane forest; Gg Brinchang, Ph.

8.1.3 **Blechnum orientale** L., **H45** 446, **P19** 400; terrestrial; common in open sites; lowlands and mountains; widespread.

8.1.4 **Blechnum patersonii** (R.Br.) Mett., **H45** 635, **P19** 405; on wet rocks in montane forest; Gg Brinchang, Ph.

8.1.5 **Blechnum serrulatum** A. Rich., **P11**; *Blechnum indicum auct. non* Burm.*f.*, **H45** 446, **P19** 4; terrestrial; open, wet places near the sea; widespread.

8.1.6 **Blechnum vestitum** (Blume) Kuhn, **H45** 449, **P19** 403; terrestrial; exposed mountain ridges and summits.

8.2.1 **Brainea insignis** (Hook.) J.Sm., **H45** 450, **P19** 409; cycad-like tree fern; Tg, Ph, Jh.

8.3.1 **Stenochlaena palustris** (Burm.*f.*) Bedd., **H45** 412, **P19** 410; commonly found climbing and scrambling at forest edges; widespread.

8.4.1 **Woodwardia auriculata** Blume, **H45** 450, **P19** 408; terrestrial; montane forest; Cameron Highlands, Ph.

9. CHEIROPLEURIACEAE

9.1.1 **Cheiropleuria bicuspis** (Blume) C. Presl, **H45** 136, **P19** 104; on shady, dryish rocks and banks; hills at 500–1500 m.

10. CYATHEACEAE

10.1.1 **Cyathea alleniae** Holttum, **FMII1** 109, **H49** 45; tree-fern to 4 m tall; disturbed montane forest at 1100–1200 m; Cameron Highlands, Ph; endemic.

10.1.2 **Cyathea alternans** (Wall. *ex* Hook.) C. Presl, **H45** 119, **FMII1** 145, **H49** 49, **P19** 92; tree-fern to 2 m tall; open forest in lowlands and hills to 1430 m; Kl, Tg, Pn, Pk, Ph, NS.

10.1.3 **Cyathea borneensis** Copel., **FMII1** 110, **H49** 45, **P19** 97; *Cyathea obtusata* Rosenst., **H43** 121; tree-fern to 5 m; in damp, shady forest at 100 m–1200 m; Pk, Ph, Sl.

10.1.4 **Cyathea contaminans** (Wall. *ex* Hook.) Copel., **H45** 119, **FMII1** 135, **H49** 49, **P17** 93; terrestrial; common at edges and clearings of hill forest up to 2000 m.

10.1.5 **Cyathea excavata** Holttum, **FMII1** 94, **H49** 46; tree-fern to 2 m; montane forest edges and clearings at 1170–1900 m; Cameron Highlands, Ph; endemic.

10.1.6 **Cyathea gigantea** (Wall. *ex* Hook.) Holttum, **H45** 128, **FMII1** 124, **H49** 48; terrestrial; open places to 350 m; P. Langkawi, Pn, Pk.

10.1.7 **Cyathea glabra** (Blume) Copel., **H45** 127, **FMII1** 120, **H49** 48, **P19** 102; tree-fern; in damp forest to 1700 m; Ps, Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

10.1.8 **Cyathea hymenodes** Mett., **FMII1** 89, **H49** 44, **P19** 96; *Cyathea latebrosa* (Wall. *ex* Hook.) Copel. var. *indusiata* Holttum, **H45** 121; tree-fern to 3.5 m; montane forest at 700–2200 m; Ph, Jh.

10.1.9 **Cyathea incisoserrata** Copel., **FMII1** 113, **H49** 46; tree-fern to 4 m; forest edges and clearings to 1400 m; Pn, Pk, Ph, Jh.

10.1.10 **Cyathea latebrosa** (Wall. *ex* Hook.) Copel., **H45** 120, **FMII1** 115, **H49** 47, **P17** 95; tree-fern to 3 m; open forest in lowlands and hills to 2000 m; widespread.

10.1.11 **Cyathea lurida** (Blume) Copel., **FMII1** 121, **H49** 47, **P19** 101; *Cyathea kingii* (C.B. Clarke) Copel., **H45** 126; terrestrial, often trunkless; montane forest at 1250–2220 m; Pk, Ph.

10.1.12 **Cyathea moluccana** R.Br., **FMII1** 143, **H49** 48, **P19** 91; *Cyathea brunonis* (J.Sm.) Wall. *ex* Hook., **H45** 117; trunk to 50 cm tall; common in secondary forest to 1300 m; Kd, Pl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

10.1.13 **Cyathea obscura** (Scort.) Copel., **H45** 124, **FMII1** 152, **H49** 50, **P19** 98; terrestrial; hill forest at 900–2000 m; Pn, Pk, Ph, Sl.

10.1.14 **Cyathea oosora** Holttum, **FMII1** 563; tree-fern; P. Tioman.

10.1.15 **Cyathea polypoda** Baker, **H45** 122, **FMII1** 151, **H49** 50; tree-fern to 3 m; on ridges in lower montane forest at 1100–1300 m; Pk, Jh.

10.1.16 **Cyathea recommutata** Copel., **H45** 125, **FMII1** 118, **H49** 47, **P19** 100; tree-fern about 3 m tall; in shaded montane forest at 600–1800 m; Pk, Ph, Sl, Jh.

10.1.17 **Cyathea squamulata** (Blume) Copel., **H45** 122, **FMII1** 152, **H49** 51; tree-fern to 2 m tall; in lowland forest to 300 m; Pn, Pk, Sl, Jh, Sp.

10.1.18 **Cyathea sumatrana** Baker, **FMII1** 91, **H49** 44; tree-fern; few collections; Sl.

10.1.19 **Cyathea trichodesma** (Scort.) Copel., **FMII1** 150, **H49** 50, **P19** 99; *Cyathea burbridgei auct. non* (Baker) Copel., **H45** 631; tree fern to 4.5 m; swampy, lowland forest to 430 m; Pk, Ph, Sl, NS.

10.1.20 **Cyathea tripinnata** Copel., **H45** 120, **FMII1** 140, **H49** 48; tree-fern up to 4–5 m; recorded at 270 m on P. Tioman.

11. DAVALLIACEAE

11.1.1 **Davallia angustata** Wall. *ex* Hook. & Grev., **N13** 173; *Humata angustata* (Wall. *ex* Hook. & Grev.) J.Sm., **H45** 367, **P19** 388; epiphyte and epilith; at higher altitudes in the north; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

11.1.2 **Davallia corniculata** T. Moore, **H45** 359, **P19** 394, **N13** 177; epiphyte; hill and montane forest; Pn, Pk, Ph.

11.1.3 **Davallia denticulata** (Burm.*f.*) Mett. *ex* Kuhn, **H45** 359, **P19** 392, **N13** 178; common lowland epiphyte; up to 500 m; throughout.

11.1.4a **Davallia divaricata** Blume var. **dimorpha** (Holttum) Noot., **N13** 180; *Davallia dimorpha* Holttum, **H45** 362; epiphyte in montane forest; thrice from Cameron Highlands, Ph; endemic variety.

11.1.4b **Davallia divaricata** Blume var. **divaricata**, **H45** 362, **P19** 398, **N13** 180; epiphytic and epilithic; lower montane forest at 600–1200 m.

11.1.5 **Davallia heterophylla** J.Sm., **N13** 185; *Humata heterophylla* (J.Sm.) Desv., **H45** 366, **P19** 387; usually on rocks near the sea.

11.1.6 **Davallia hymenophylloides** (Blume) Kuhn, **N13** 186; *Araiostegia hymenophylloides* (Blume) Copel., **H45** 363, **P19** 386, **N12** 171; epiphyte or rock plant; montane forest at 600–1200 m; widespread.

11.1.7 **Davallia parvula** Wall. *ex* Hook. & Grev., **N13** 189; *Humata parvula* (Wall. *ex* Hook. & Grev.) Mett., **H45** 369; epiphyte; on old mangrove trees; Jh, Sp.

11.1.8 **Davallia pectinata** J.Sm., **N13** 189; *Humata pectinata* (J.Sm.) Desv., **H45** 369; on rocks and trees near the sea, limestone inland; P. Langkawi, Kl, Ph, Ml, Jh, Sp.

11.1.9 **Davallia repens** (L.*f.*) Kuhn, **N13** 192; *Humata repens* (L.*f.*) Diels, **H45** 371, **P19** 390; *Humata vestita* (Blume) T. Moore, **H45** 370, **P19** 389; on rocks and trees in lowland and montane forest; throughout.

11.1.10 **Davallia solida** (G. Forst.) Sw., **H45** 360, **P19** 395, **N13** 202; common on trees and rocks near the sea; up to 300 m; throughout.

11.1.11a **Davallia trichomanioides** Blume var. **lorrainii** (Hance) Holttum, **H45** 361, **P19** 397; on trees and rocks in montane forest; Kd, Pn, Sl, NS.

11.1.11b **Davallia trichomanioides** Blume var. **trichomanioides**, **H45** 361, **P19** 396, **N13** 206; on trees and rocks in montane forest.

11.1.12 **Davallia triphylla** Hook., **H45** 357, **P19** 391, **N13** 210; epiphyte in lowland forest; Tg, Pk, Sl, NS, Jh, Sp.

11.2.1 **Leucostegia immersa** (Wall. *ex* Hook.) C. Presl, **H45** 352, **N12** 185; epiphytic and terrestrial; once collected from Gg Tahan, Ph.

11.2.2 **Leucostegia pallida** (Mett.) Copel., **H45** 353, **P19** 385, **N12** 186; in light shade in hills and mountains; Pk.

12. DENNSTAEDTIACEAE

12.1.1 **Dennstaedtia ampla** (Baker) Bedd., **H45** 304, **P19** 234; under forest shade in hills and mountains; Pk, Ph.

12.2.1 **Histiopteris incisa** (Thunb.) J.Sm., **H45** 391, **P19** 246; terrestrial; lowlands and uplands; widespread.

12.2.2 **Histiopteris stipulacea** (Hook.) Copel., **H45** 391, **P19** 247; terrestrial; forest edges in the mountains at about 1500 m.

12.3.1 **Hypolepis brooksiae** Alderw., **H45** 317, **B36** 235, **P19** 240; a prickly scrambling fern; mountain clearings at 1050–1500 m; Pk, Ph.

12.3.2 **Hypolepis pallida** (Blume) Hook., **B36** 269; *Hypolepis punctata sensu* Bedd., **H45** 318 in part; *Hypolepis beddomei* Nair & Ghosh, **P19** 241; scrambling fern; grassy gaps in hill forest at 1050–1550 m; Pk, Sl.

12.3.3 **Hypolepis polypodioides** (Blume) Hook., **B36** 243; once collected on Gg Ulu Kali, Ph.

12.3.4 **Hypolepis punctata** (Thunb.) Mett. *ex* Kuhn, **H45** 318 in part, **B36** 250; edges of montane forest at 1050–1440 m; Gg Hijau, Pk, & Cameron Highlands, Ph.

12.3.5 **Hypolepis scabristipes** Brownsey, **B36** 238; scrambler of mountain forest edges; Gg Ulu Kali and Gg Batu Brinchang, Ph.

12.4.1 **Lindsaea borneensis** Hook. *ex* Baker, **H45** 331, **FMII1** 225; in lowland forests to 700 m, often on rocks

12.4.2 **Lindsaea bouillodii** H. Christ, **FMII1** 204, **P19** 266; *Schizoloma tenerum sensu* Holttum, **H43** 348; floors of damp montane forests at 300–1400 m.

12.4.3 **Lindsaea cultrata** (Willd.) Sw., **FMII1** 222; *Lindsaea decomposita* Willd., **H45** 333, **P19** 260; under forest shade to 1300 m.

12.4.4 **Lindsaea divergens** Hook. & Grev., **FMII1** 233; *Isoloma divergens* (Hook. & Grev.) J.Sm., **H45** 337; under forest shade to 800 m.

12.4.5 **Lindsaea doryophora** K.U. Kramer, **FMII1** 227, **P19** 254; *Lindsaea scandens* Hook. var. *terrestris* Holttum, *nom. inval.*, **H45** 327; in forests to 1300 m.

12.4.6a **Lindsaea ensifolia** Sw. ssp. **coriacea** (Alderw.) K.U. Kramer, **FMII1** 212; **P19** 265 in part; *Schizoloma ensifolium* (Sw.) J.Sm., **H43** 346 in part; acidic swamp forests; Jh, Sp.

12.4.6b **Lindsaea ensifolia** Sw. ssp. **ensifolia**, **FMII1** 212; **P19** 265 in part; *Schizoloma ensifolium* (Sw.) J.Sm., **H45** 346 in part; open places in lowlands and hills to 1000 m.

12.4.7 **Lindsaea heterophylla** Dryand., **FMII1** 210, **P19** 264; *Schizoloma heterophyllum* (Dryand.) J.Sm., **H45** 345; open or slightly shaded places to 1100 m.

12.4.8 **Lindsaea integra** Holttum, **FMII1** 223; *Lindsaea nitida auct. non* Copel., **H45** 333; on rocks by streams in forest at 100–1200 m; Pk, Ph, Sl, Ml.

12.4.9 **Lindsaea javanensis** Blume, **FMII1** 208; *Schizoloma javanense* (Blume) Holttum, **H45** 349; in forests to 1400 m.

12.4.10 **Lindsaea lobata** Poir., **FMII1** 219; a few doubtful collections.

12.4.11 **Lindsaea lucida** Blume, **H45** 328, **FMII1** 233, **P19** 255; shaded stream banks in lowlands and hills to 1600 m.

12.4.12 **Lindsaea malayensis** Holttum, **H45** 335, **FMII1** 217, **P19** 262; terrestrial in shady montane forests at 1200–2000 m; Pk, Ph.

12.4.13 **Lindsaea napaea** Alderw., **H45** 330, **FMII1** 217, **P19** 258; on the ground and rocks in lower montane forest at 1000–1300 m; Kd, Kl, Pn, Pk, Ph, Sl, Ml.

12.4.14 **Lindsaea oblanceolata** Alderw., **FMII1** 236, **P19** 252; *Lindsaea pectinata auct. non* Blume, **H43** 324; usually climbing on tree trunks in hill forest at 800–1800 m.

12.4.15 **Lindsaea obtusa** J.Sm. *ex* Hook., **FMII1** 218; *Lindsaea davallioides auct. non* Blume, **H45** 332; terrestrial; lowland forest to 1500 m.

12.4.16 **Lindsaea odorata** Roxb., **FMII1** 228, **P19** 256; *Lindsaea cultrata auct. non* (Willd.) Sw., **H45** 328; on banks and rocks; commoner in the mountains, to 2000 m; Pk, Ph.

12.4.17a **Lindsaea orbiculata** (Lam.) Mett. *ex* Kuhn var. **commixta** (Tagawa) K.U. Kramer, **FMII1** 207; *Schizoloma orbiculatum* (Lam.) Kuhn, **H45** 344 in part; *Lindsaea orbiculata* (Lam.) Mett. *ex* Kuhn, **P19** 263 in part; usually on rocks near the sea, sometimes inland to 500 m.

12.4.17b **Lindsaea orbiculata** (Lam.) Mett. *ex* Kuhn var. **orbiculata**, **FMII1** 206; *Schizoloma orbiculatum* (Lam.) Kuhn, **H45** 344 in part; *Lindsaea orbiculata* (Lam.) Mett. *ex* Kuhn, **P19** 263 in part; usually on rocks near the sea, sometimes inland to 500 m.

12.4.18 **Lindsaea ovata** J.Sm., **FMII1** 231; *Isoloma ovatum* (J.Sm.) C. Presl, **H45** 338; terrestrial and epilithic to 1000 m.

12.4.19 **Lindsaea parallelogramma** Alderw., **H45** 335, **FMII1** 220, **P19** 261; understorey of hill forests to 1200 m.

12.4.20 **Lindsaea parastica** (Roxb. *ex* Griff.) Hieron., **FMII1** 244; *Lindsaea scandens* Hook., **H45** 325, **P19** 253; epiphyte, occasionally terrestrial; forests to 1100 m.

12.4.21 **Lindsaea repens** (Bory) Thwaites var. **pectinata** (Blume) Mett. *ex* Kuhn, **FMII1** 239; *Lindsaea macraeana* (Hook. & Arn.) Copel., **H45** 324; *Lindsaea repens* (Bory) Thwaites, **P19** 251; forest epiphyte; mostly 600–1500 m.

12.4.22 **Lindsaea rigida** J.Sm. *ex* Hook., **H45** 330, **FMII1** 245, **P19** 257; on trees, rocks or the ground in montane forest at 1000–2000 m.

12.4.23 **Lindsaea walkerae** Hook., **FMii1** 229; *Schizoloma walkerae* (Hook.) Kuhn, **H45** 344; moist open places, swamps & streamsides; lowlands and hills to 1200 m.

12.5.1 **Microlepia puberula** Alderw., **H45** 312; three collections from lowland forest; Pk, Ph, Sl.

12.5.2 **Microlepia ridleyi** Copel., **H45** 313; lowland forest near streams; Pk, Ph, Sl.

12.5.3a **Microlepia speluncae** (L.) T. Moore var. **hancei** (Prantl) C.Chr. & Tardieu, **H45** 315, **P19** 237; grassy places in the lowlands.

12.5.3b **Microlepia speluncae** (L.) T. Moore var. **villosissima** C.Chr., **H45** 315, **P19** 238; lowlands including on limestone.

12.5.4 **Microlepia strigosa** (Thunb.) C. Presl, **H45** 310; in forest; Pk, P. Langkawi.

12.5.5 **Microlepia todayensis** H. Christ, **H45** 310, **P19** 235; upper montane forest; Pk, Ph.

12.5.6 **Microlepia trapeziformis** (Roxb.) Kuhn, **H45** 313, **P19** 236; rocky stream beds at about 1500 m; Cameron Highlands, Ph.

12.6.1a **Odontosoria chinensis** (L.) J. Sm. var. **chinensis**, **P12** 151; *Sphenomeris chinensis* (L.) Maxon var. *chinensis*, **FMii1** 183, **P19** 248; terrestrial and on rocks in open places; commonest at 800–1500 m.

12.6.1b **Odontosoria chinensis** (L.) J. Sm. var. **divaricata** H. Christ, **P11**; *Sphenomeris chusana* (L.) Copel. var. *tenuifolia* (Sw.) C.Chr., **H45** 341; *Sphenomeris chinensis* (L.) Maxon var. *divaricata* (H. Christ) K.U. Kramer, **FMii1** 183, **P19** 248; open places in lowlands and mountains, mostly above 700 m.

12.6.1c **Odontosoria chinensis** (L.) J. Sm. var. **rheophila** (K.U. Kramer) Parris ined., **P11**; *Sphenomeris chinensis* (L.) Maxon var. *rheophila* K.U. Kramer, **FMii1** 183; by torrents and waterfalls at 100–500 m; Pn.

12.7.1 **Paesia elmeri** Copel., **P19** 242; *Hypolepis bivalvis* Alderw., **H45** 318; sticky fern of quartz ridges on mountains; Fraser's Hill and Gg Tahan, Ph.

12.8.1 **Pteridium aquilinum** (L.) Kuhn var. **wightianum** (J. Agardh) R.M. Tryon, **P19** 243; *Pteridium aquilinum* (L.) Kuhn, **H45** 389; forming thickets in the mountains.

12.8.2 **Pteridium esculentum** (G. Forst.) Cockayne, **H45** 390, **P11**; *Pteridium caudatum* (L.) Maxon ssp. *yarrabense* (Domin) Parris, **P17** 245; commonly forming thickets in the lowlands.

12.9.1 **Saccoloma kingii** (Bedd.) Parris, **P12** 151; *Orthiopteris kingii* (Bedd.) Holttum, **H45** 306, **P19** 239; near shaded streams in the mountains at about 1000 m; Pk, Ph.

12.10.1 **Tapeinidium biserratum** (Blume) Alderw., **FMII1** 194, **P11**; terrestrial.

12.10.2 **Tapeinidium luzonicum** (Hook.) K.U. Kramer, **FMII1** 193, **P19** 250; *Tapeinidium biserratum auct. non* (Blume) Alderw., **H45** 339; steep rocky slopes by shady streams in the hills at 600–1500 m.

12.10.3 **Tapeinidium pinnatum** (Cav.) C.Chr., **H45** 339, **FMII1** 193, **P19** 249; in shady forests, often on rocks by streams; commonest at 500–1000 m.

13. DICKSONIACEAE

13.1.1 **Cibotium barometz** (L.) J.Sm., **H45** 114, **FMII1** 165, **P19** 90; openings in forest; lowlands to mountains at 1600 m.

14. DIPTERIDACEAE

14.1.1 **Dipteris conjugata** Reinw., **H45** 135, **P19** 103; terrestrial; common in clearings in the mountains, occasional lower down; usually at 300–1500 m.

14.1.2a **Dipteris lobbiana** (Hook.) T. Moore var. **binervis** Ridl., **H45** 135; rheophyte; Sg Teku on Gg Tahan, Ph; endemic variety.

14.1.2b **Dipteris lobbiana** (Hook.) T. Moore var. **lobbiana**, **H45** 133; rheophyte; lowlands and hills to 1000 m.

14.1.3 **Dipteris novoguineensis** Posth., **H45** 136; on exposed mountain ridges; collected once at about 2000 m on Gg Tahan, Ph.

15. DRYOPTERIDACEAE

15.1.1 **Acrophorus nodosus** C. Presl, **P19** 318; *Acrophorus blumei* Ching, **H45** 481; high mountain summit forests.

15.2.1 **Arachniodes aristata** (G. Forst.) Tindale, **H45** 635; *Polystichopsis aristata* (G. Forst.) Holttum, **H45** 486; rocky banks of Sg Tahan, Ph at about 150 m.

15.2.2 **Arachniodes chinensis** (Rosenst.) Ching, **H45** 635, **T03** 344; *Polystichopsis chinensis* (Rosenst.) Holttum, **H45** 486; collected once near a stream at about 1000 m; Cameron Highlands, Ph.

15.2.3 **Arachniodes haniffii** (Holttum) Ching, **H45** 635, **P19** 323; *Polystichopsis haniffii* (Holttum) Holttum, **H45** 485; forested valleys at high altitudes; endemic.

15.2.4 **Arachniodes puncticulata** (Alderw.) Ching, **H45** 635; *Polystichopsis puncticulata* (Alderw.) Holttum, **H45** 487; mountain tops at 1500–2000 m; Pk, Ph.

15.3.1 **Ctenitis subobscura** (H. Christ) Holttum, **FMII2** 31; *Ctenitis manii auct. non* (Hope) Ching, **H45** 497; on rocks and banks in forests.

15.3.2 **Ctenitis vilis** (Kunze) Ching, **H45** 496, **P19** 327, **FMII2** 30; near forest streams in lowlands and hills.

15.4.1 **Cyclopeltis crenata** (Fée) C.Chr., **H45** 527, **P19** 328, **FMII2** 117; on rocks, usually limestone, in forest.

15.5.1 **Didymochlaena trunculata** (Sw.) J.Sm., **H45** 483, **P19** 325; montane forests.

15.6.1 **Dryopteris integriloba** C.Chr., **P19** 321; terrestrial; known from one rock outcrop in NS.

15.6.2 **Dryopteris hasseltii** (Blume) C. Chr., **F19** 436; *Polystichopsis hasseltii* (Blume) Holttum, **H45** 487; *Arachniodes hasseltii* (Blume) Ching, **H45** 635, **P19** 324; in forest at mid-elevations; Pk, Ph, Jh.

15.6.3 **Dryopteris hirtipes** (Blume) Kunze, **H45** 635, **F19** 332; terrestrial; montane forest and its margins; Cameron Highlands, Ph.

15.6.4 **Dryopteris polita** Rosenstock, **H45** 492, **P19** 321; terrestrial; rare in montane forest; Cameron Highlands, Ph.

15.6.5 **Dryopteris sparsa** (Buch.-Ham. *ex* D.Don) Kuntze, **H45** 492, **P19** 320, **F17** 438; terrestrial; understorey of lower montane forest; Maxwell Hill, Pk, Fraser's Hill & Cameron Highlands, Ph.

15.6.6 **Dryopteris subarborea** (Baker) C.Chr., **H45** 491, **P19** 319; terrestrial or epiphytic in montane forest; Cameron Highlands, Ph.

15.7.1 **Heterogonium alderwereltii** Holttum, **H45** 522, **C13** 210, **FMII2** 112; terrestrial; on limestone; north of Malaya.

15.7.2 **Heterogonium giganteum** (Blume) Holttum, **FMII2** 114; *Heterogonium saxicola* (Blume) Holttum, **H45** 525, **P19** 337; terrestrial; shady valleys in hills to 1000 m.

15.7.3 **Heterogonium pinnatum** (Copel.) Holttum, **H45** 524, **C13** 210, **P19** 336, **FMII2** 115; terrestrial; mostly on limestone; north of Malaya.

15.7.4 **Heterogonium sagenioides** (Mett.) Holttum, **H45** 520, **P19** 334, **FMII2** 108; terrestrial; lowland forest to 800 m.

Piggott [**P19** 335] included a record of *Heterogonium wigmanii* (Racib.) Holttum [**FMII2** 109] in her account. B.S. Parris (*pers. comm.*) has been unable to find any material to confirm its occurrence well outside its known range.

15.8.1 **Peranema aspidioides** (Blume) Mett., **P12** 151; *Diacalpe aspidioides* Blume, **H45** 481, **P19** 317; exposed, wet places near mountain tops.

15.9.1 **Pleocnemia conjugata** (Blume) C. Presl, **P19** 330, **FMII2** 16; terrestrial; lightly shaded places in the lowlands; north of the Peninsula.

15.9.2 **Pleocnemia hemiteliiformis** (Racib.) Holttum, **P19** 331, **FMII2** 17; terrestrial; open places in forests at 800–1400 m.

15.9.3 **Pleocnemia irregularis** (C. Presl) Holttum, **P19** 333, **FMII2** 12; *Arcypteris irregularis* (C. Presl) Ching, **H45** 538; terrestrial; common in lightly shaded areas.

15.9.4 **Pleocnemia olivacea** (Copel.) Holttum, **P19** 331, **FMII2** 19; terrestrial; rocky places in lowland forest.

15.10.1 **Polystichum lindsaeifolium** Scort. *ex* Ridl., **H45** 489, **C13** 213; terrestrial; limestone hills; Kl, Ph, Sl.

15.10.2 **Polystichum prolificans** Alderw., **H45** 490; on rocks in shady valleys in the hills.

15.11.1 **Pteridrys acutissima** Ching, **H45** 531, **FMII2** 7; poorly known species; Pk.

15.11.2 **Pteridrys australis** Ching, **H45** 532, **P19** 329, **FMII2** 7; on rocks near partially shaded streams to 900 m; Sl.

15.11.3 **Pteridrys syrmatica** (Willd.) C.Chr. & Ching, **H45** 530, **C13** 213, **FMII2** 5; shaded places; on limestone; in the north.

15.12.1 **Tectaria angulata** (Willd.) C.Chr., **H45** 511, **P19** 343, **FMII2** 85; on rocks near forest streams.

15.12.2 **Tectaria barberi** (Hook.) Copel., **H45** 508, **P19** 340, **FMII2** 52; terrestrial; wet shady places in lowland forests.

15.12.3 **Tectaria brachiata** (Zoll. & Moritzi) C.V. Morton, **FMII2** 70; *Tectaria variolosa sensu* Holttum, **H45** 506 in part; rocky places in north.

15.12.4 **Tectaria cherasica** Holttum, **FMII2** 71; known only from type, on limestone, Bt Cheras, Ph; endemic.

15.12.5 **Tectaria coadunata** (J.Sm.) C.Chr. var **minor** Holttum, **P19** 338, **FMII2** 59; *Tectaria macrodonta auct. non* (Fée) C.Chr., **H45** 505; on limestone; Ps, P. Langkawi; endemic variety.

15.12.6 **Tectaria crenata** Cav., **H45** 510, **FMII2** 80; terrestrial; lowland and hill forest; widespread.

15.12.7a **Tectaria curtisii** Holttum var. **curtisii**, **FMII2** 70; on limestone; near Ipoh, Pk; endemic.

15.12.7b **Tectaria curtisii** Holttum var. **hendersonii** Holttum, **FMII2** 71; Gg Senyum, Ph, endemic.

15.12.8 **Tectaria decurrens** (C. Presl) Copel., **H45** 635, **FMII2** 90; terrestrial; lowland and hill forest; Pk.

15.12.9 **Tectaria devexa** (Kunze) Copel., **H45** 505, **C13** 214, **FMII2** 57; on limestone.

15.12.10 **Tectaria fauriei** Tagawa, **FMII2** 77; rheophyte; Ph.

15.12.11 **Tectaria fissa** (Kunze) Holttum, **FMII2** 87; *Tectaria polymorpha* (Wall. *ex* Hook.) Copel. var. *cuneifolia* Bonap., **H45** 518; *Tectaria rumicifolia* (Ridl.) C.Chr., **H45** 519; *Tectaria oligophylla* (Rosenst.) C.Chr., **P19** 352; terrestrial; forest to 1200 m.

15.12.12 **Tectaria grandidentata** (Ces.) Holttum, **H45** 514, **P19** 348, **FMII2** 92; on rocks in forest.

15.12.13a **Tectaria griffithii** (Baker) C.Chr. var. **griffithii**, **P19** 339, **FMII2** 54; *Tectaria multicaudata* (C.B. Clarke) Ching, **H45** 507 in part; terrestrial; lowland forest.

15.12.13b **Tectaria griffithii** (Baker) C.Chr. var. **singaporeana** Holttum, **FMII2** 55; *Tectaria multicaudata* (C.B. Clarke) Ching, **H45** 507 in part; terrestrial; lowland forest; Bukit Timah, Sp; endemic variety.

15.12.14 **Tectaria herpetocaulos** Holttum, **H45** 636, **FMII2** 89; on humus covered rocks at 600 m; off road to the Cameron Highlands, Ph.

15.12.15 **Tectaria impressa** (Fée) Holttum, **FMII2** 51; *Tectaria variolosa* (Hook.) C.Chr., **H45** 506 in part; limestone forest; P. Langkawi.

15.12.16 **Tectaria keckii** (Luersson) C.Chr., **P19** 349, **FMII2** 72; *Tectaria amplifolia* (Alderw.) C.Chr., **H45** 515, **C13** 214; shady places on limestone; north of Malaya.

15.12.17a **Tectaria manilensis** (C. Presl) Holttum var. **chupengensis** (Ridl.) Holttum, **FMII2** 45; *Lastreopsis parishii* (Hook.) Ching var. *chupengensis* (Ridl.) Holttum, **H45** 498; on limestone; Chupeng, Ps; endemic variety.

15.12.17b **Tectaria manilensis** (C. Presl) Holttum var. **manilensis**, **FMII2** 45; *Lastreopsis parishii* (Hook.) Ching var. *parishii*, **H45** 498; on limestone; Ps, P. Langkawi.

15.12.18 **Tectaria melanocaula** (Blume) Copel., **H45** 636, **P19** 350, **FMII2** 66; terrestrial; lower montane forest at about 1000 m; Cameron Highlands, Ph.

15.12.19 **Tectaria semibipinnata** (Wall. *ex* Hook.) Copel., **H45** 515, **FMII2** 73; terrestrial; muddy river banks in the tidal zone.

15.12.20 **Tectaria semipinnata** (Roxb.) C.V. Morton, **P19** 347, **FMII2** 78; *Tectaria maingayi* (Baker) C.Chr., **H45** 509; terrestrial; lowland forest.

15.12.21 **Tectaria setulosa** (Baker) Holttum, **FMII2** 47; *Tectaria ingens sensu* Holttum, **H45** 503; wet ground under wild bananas at 1850 m; Ph.

15.12.22 **Tectaria siifolia** (Willd.) Copel., **FMII2** 84; *Tectaria ternifolia* (Alderw.) C.Chr., **H45** 516; limestone; Pk, Ph.

15.12.23 **Tectaria simonsii** (Baker) Ching, **P19** 351, **FMII2** 67; terrestrial; rocky places and steep slopes in hill forest at 600–900 m; Main Range.

15.12.24 **Tectaria singaporeana** (Hook. & Grev.) Copel., **H45** 512, **P19** 345, **FMII2** 100; terrestrial; lowland forest.

15.12.25 **Tectaria translucens** Holttum, **FMII2** 71; limestone crevices and forest nearby; Ph; endemic.

15.12.26 **Tectaria tricuspis** (Bedd.) Copel., **FMII2** 91; terrestrial; lowland forest; Pk.

15.12.27 **Tectaria vasta** (Blume) Copel., **H45** 512, **P19** 346, **FMII2** 92; terrestrial; lowland and hill forest and plantations.

15.12.28 **Tectaria zeilanica** (Houtt.) Sledge, **FMII2** 75; *Quercifilix zeilanica* (Houtt.) Copel., **H45** 528, **P19** 353 '*zeylanica*'; terrestrial; earth banks and streamsides in shade; P. Tioman.

16. GLEICHENIACEAE

16.1.1 **Dicranopteris curranii** Copel., **FMII1** 31, **P19** 59; *Gleichenia linearis* (Burm.*f.*) C.B. Clarke var. *malayana* Alderw., **H45** 68; thicket-forming terrestrial fern; lowlands and hills to 1500 m; widespread.

16.1.2a **Dicranopteris linearis** (Burm.*f.*) Underw. var. **alternans** (Mett.) Holttum, **FMII1** 36; *Gleichenia linearis* (Burm.*f.*) C.B. Clarke var. *irregularis* Alderw., **H45** 68; thicket-forming terrestrial; lowlands to 500 m.

16.1.2b **Dicranopteris linearis** (Burm.*f.*) Underw. var. **altissima** (Holttum) Holttum, **FMii1** 36, **H45** 630; *Gleichenia linearis* (Burm.*f.*) C.B. Clarke var. *altissima* Holttum, **H45** 69; thicket-forming fern; edge of lowland forests.

16.1.2c **Dicranopteris linearis** (Burm.*f.*) Underw. var. **inaequalis** (Rosenst.) Holttum, **FMii1** 36, **H45** 631, **P19** 631; thicket-forming fern; mountains at about 1400 m; Cameron highlands, Ph.

16.1.2d **Dicranopteris linearis** (Burm.*f.*) Underw. var. **linearis**, **FMii1** 3, **P19** 54; *Gleichenia linearis* (Burm.*f.*) C.B. Clarke var. *normalis sensu* Holttum, **H45** 70; very common thicket former; lowlands and mountains to 1400 m; throughout.

16.1.2e **Dicranopteris linearis** (Burm.*f.*) Underw. var. **montana** (Holttum) Holttum, **FMii1** 36, **H45** 630, **P19** 53; *Gleichenia linearis* (Burm.*f.*) C.B. Clarke var. *montana* Holttum, **H43** 69; thicket-forming fern; edge of montane forests at 400–1600 m.

16.1.2f **Dicranopteris linearis** (Burm.*f.*) Underw. var. **subpectinata** (H. Christ) Holttum, **FMii1** 35, **P19** 55; *Gleichenia linearis* (Burm.*f.*) C.B. Clarke var. *alternans auct. non* Mett., **H45** 68; forming thickets; lowlands to 700 m.

16.1.2g **Dicranopteris linearis** (Burm.*f.*) Underw. var. **subspeciosa** Holttum, **H45** 631, **FMii1** 35, **P19** 57; thicket-former at forest margins; lowlands and hills to 1400 m.

16.1.3 **Dicranopteris pubigera** (Blume) Nakai, **FMii1** 32, **H45** 630, **P19** 61; terrestrial; mountain tops; Cameron and Genting Highlands, Ph.

16.1.4 **Dicranopteris speciosa** (C. Presl) Holttum, **FMii1** 32, **H45** 631, **P19** 60; *Gleichenia opposita* Alderw., **H45** 70; thicket-forming fern; forest edges at 100–600 m.

16.2.1 **Diplopterygium blotianum** (C. Chr.) Nakai; **P11**; *Gleichenia norrisii auct. non* Mett., **H45** 67 in the minor part; *Gleichenia blotiana* C. Chr., **FMii1** 17, **P19** 50; terrestrial; edge of montane forest at about 1500 m; Cameron Highlands, Ph.

16.2.2 **Diplopterygium giganteum** (Wall. *ex* Hook.) Nakai, **P11**; *Gleichenia gigantea* Wall. *ex* Hook., **FMii1** 561; *Gleichenia volubilis* Jungh. var. *peninsularis* Holttum, **FMii1** 13, **H45** 630; terrestrial; once collected on Gg Bintang, Kd.

16.2.3 **Diplopterygium longissimum** (Blume) Nakai, **P11**; *Gleichenia longissima* Blume, **FMii1** 13, **H45** 67, **P19** 48; thicket-forming terrestrial; hills and mountains.

16.2.4 **Diplopterygium norrisii** (Mett.) Nakai, **P12** 59; *Gleichenia norrisii* Mett., **H45** 67 in part, **FMII1** 15; terrestrial; clearings and forest margins at 650–1250 m; Kd, Pn, Pk, Ph, Jh.

16.2.5 **Diplopterygium sordidum** (Copel.) Parris *ined.*, **P11**; *Gleichenia sordida* Copel., **FMII1** 15, **H45** 630; terrestrial; edge of montane forest; once collected at Fraser's Hill, Ph.

16.3.1 **Gleichenia dicarpa** R. Br., **FMII1** 9, **P11**; terrestrial.

16.3.2 **Gleichenia microphylla** R. Br., **FMII1** 7, **P19** 46; *Gleichenia microphylla* R.Br. var. *semivestita* (Labill.) Alderw., **H45** 65; terrestrial; exposed mountain ridges and summits at 750–1800 m; Kd, Pk, Jh.

16.3.3 **Gleichenia vulcanica** Blume, **FMII1** 9, **H45** 630, **P19** 47; *Gleichenia microphylla* R.Br. var. *vulcanica* (Blume) Holttum, **H45** 66; terrestrial; mountain tops; Pk, Ph, Sl.

16.4.1 **Sticherus hirtus** (Blume) Ching var. **amoenus** (Alderw.) Parris *ined.*, **P11**; *Gleichenia hirta* Blume var. *amoena* (Alderw.) Holttum, **FMII1** 26, **P19** 52; *Gleichenia hirta* Blume, **H45** 71; terrestrial; edge of forest or lightly shaded places at 700–1600 m.

16.4.2a **Sticherus truncatus** (Willd.) Nakai var. **plumaeformis** (C. Presl) Parris *ined.*, **P11**; *Gleichenia truncata* (Willd.) Spreng. var. *plumaeformis* (C. Presl) Holttum, **FMII1** 21, **P19** 52; terrestrial; open places on mountains at 1200–1800 m.

16.4.2b **Sticherus truncatus** (Willd.) Nakai var. **truncatus**, **P11**; *Gleichenia truncata* (Willd.) Spreng. var *truncata*, **FMII1** 20, **P19** 51; *Gleichenia laevigata* (Willd.) Hook., **H45** 71; thicket-forming fern; forest margins to 1600 m; widespread.

17. GRAMMITIDACEAE

17.1.1 **Acrosorus friderici-et-pauli** (H. Christ) Copel., **P11**; *Acrosorus triangularis* Copel., **H43** 222, **P07** 508; on rocks and trees; montane forest at 1350–1600 m; Pk, Ph.

17.1.2 **Acrosorus streptophyllus** (Baker) Copel., **H45** 222, **P09** 508, **P19** 165; on tree trunks and the undersides of branches; lower montane forest at 1100–1500 m; Pk, Ph.

17.2.1 **Calymmodon asiaticus** Copel., **P09** 506; *Calymmodon cucullatus auct. non* (Nees & Blume) C. Presl, **H45** 220 in part; near streams in hill forest at 800–1000 m; Pk.

17.2.2 **Calymmodon cucullatus** (Nees & Blume) C. Presl, **P09** 507; once collected in mountains of Pk.

17.2.3 **Calymmodon curtus** Parris, **P09** 506, **P19** 164, **P10** 125; *Calymmodon cucullatus auct. non* (Nees & Blume) C. Presl, **H45** 220 in part; on mossy trees in the mountains at 900–1850 m; Pk, Ph, Sl.

17.2.4 **Calymmodon gracilis** (Fée) Copel., **H45** 221, **P09** 506, **P19** 165; on mossy tree trunks at 1050–1850 m; Pk, Ph, Sl.

17.3.1 **Ctenopteris blechnoides** (Grev.) W.H. Wagner & Grether, **P09** 494; *Ctenopteris moultonii* (Copel.) C.Chr. & Tardieu, **H45** 229; epiphytic; mangroves, lowland and montane forest to 1000 m; Kd, Pn, Pk, Ph, NS, Ml, Jh.

17.3.2 **Ctenopteris brevivenosa** (Alderw.) Holttum, **H45** 228, **P09** 496, **P19** 169; on mossy tree trunks; lower montane forest at 1200–1700 m; Pk, Ph, Sl.

17.3.3 **Ctenopteris fuscata** (Blume) Kunze, **H45** 227, **P09** 496, **P19** 168; on mossy tree trunks; mountains at 1400–1800 m; Pk, Ph, Sl.

17.3.4 **Ctenopteris inconspicua** (Blume) Copel., **P09** 495; epiphyte; mountain forest ridge; once collected on Fraser's Hill, Ph.

17.3.5 **Ctenopteris malayana** Parris, **P09** 494, **P10** 53; on mossy trees; montane forest at 1500–1800 m; Gg Ulu Kali, Sl; endemic.

17.3.6 **Ctenopteris minuta** (Blume) Holttum, **H45** 228, **P09** 495; epiphytic; hill forest at 650–1000 m; Pn, Sl, Ml.

17.3.7 **Ctenopteris mollicoma** (Nees & Blume) Kunze, **H45** 226, **P09** 497, **P19** 167; epiphyte; mountain ridges at 1500–1850 m; Ph, Sl, Ml.

17.3.8 **Ctenopteris nutans** (Blume) J. Sm., **P09** 497; epiphyte; montane forest at about 1700 m; once collected on Gg Batu Brinchang, Ph.

17.3.9 **Ctenopteris subminuta** (Alderw.) Holttum, **H45** 228, **P09** 495, **P19** 170; epiphyte; mossy forest at 1200–1400 m; Pk, Ph.

17.3.10 **Ctenopteris tenuisecta** (Blume) J.Sm., **H45** 226, **P09** 493, **P19** 166; epiphyte; montane forest at 1350–1750 m; Pk, Ph, Sl.

17.4.1 **Grammitis adspersa** (Blume) Blume, **H45** 214, **P09** 509; epiphyte on tree trunks; hill forest at 500–1200 m; Tg, Pn, Pk, NS, Ml, Jh.

17.4.2 **Grammitis congener** Blume, **P09** 511; *Grammitis hirtella auct. non* (Blume) Tuyama, **H45** 216 in part; epiphyte; low forest on montane ridges at 1370–1830 m; Pk, Ph, Sl.

17.4.3 **Grammitis crispatula** Holttum, **H45** 218, **P09** 512; on mossy rocks; hill forest at 700–1000 m; Taiping Hills, Pk.

17.4.4 **Grammitis holttumii** Copel., **H45** 216, **P09** 512; on trees near streams; montane forest at 1200–1460 m; Cameron Highlands and Fraser's Hill, Ph.

17.4.5 **Grammitis jeraiensis** Parris, **P10** 29; terrestrial; montane forest at 760–1200 m; Gg Jerai, Kd; endemic.

17.4.6 **Grammitis maxwellii** (Baker) Parris, **P08** 118, **P11**; epiphyte.

17.4.7 **Grammitis multifolia** Copel., **P11**; *Grammitis hirtella auct. non* (Blume) Tuyama, **H45** 216 in part; *Grammitis lasiosora* (Blume) Ching, **P09** 512; on mossy tree trunks; montane forest at 1350–1800 m; Pn, Tg, Pk, Ph, Sl.

17.4.8 **Grammitis peninsularis** Copel., **H45** 217, **P09** 513; on mossy tree trunks; montane forest at 900–1500 m; Gg Tahan, Ph, Gg Ledang & Gg Belumut, Jh; endemic.

17.4.9 **Grammitis pseudoxiphopteris** Parris, **P10** 25; epiphyte; montane forest at about 1000 m; once from Gg Belumut, Jh; endemic.

17.4.10 **Grammitis reinwardtii** Blume, **H45** 215, **P09** 511, **P19** 160; on mossy trees; montane forest at 1500–2000 m; Pk, Ph, Sl.

17.4.11 **Grammitis rivularis** Parris, **P09** 514, **P10** 17; on rocks; lowland forest; once collected at Sg Kemas, Pk.

17.4.12 **Grammitis universa** (Baker) Copel., **H45** 215, **P09** 514; rheophyte; lowlands at 150–600 m; Pn, Pk, Ph; endemic.

17.4.13 **Grammitis vittariifolia** (C.Chr.) Parris, **P09** 510, **P10** 13; epiphyte; lowland forest; once collected on Gg Pulai, Jh.

17.4.14 **Grammitis sp.** 9, **P11**; epiphyte; Gg Belumut, Jh; endemic.

17.4.15 **Grammitis sp.** 10, **P11**; epiphyte; Gg Ledang, Ml; endemic.

17.5.1 **Prosaptia alata** (Blume) H. Christ, **T04** 593; *Ctenopteris alata* (Blume) Holttum, **H43** 232, **P07** 500, **P17** 173; on trees or fallen logs near streams; hill forest at 750–1300 m; Pn, Pk, Ph, Sl, NS, Jh.

17.5.2 **Prosaptia barathrophylla** (Baker) M.G. Price, **P09**; *Ctenopteris khasyana auct. non* (Hook.) Copel., **H45** 223, **P19** 174; *Ctenopteris barathrophylla* (Baker) Parris, **P09** 494, **P10** 81; epiphyte; hill forest at 600–1300 m; Pk, Ph, Sl, NS.

17.5.3 **Prosaptia celebica** (Blume) Tagawa & K. Iwatsuki, **T04** 594; *Ctenopteris celebica* (Blume) Copel., **H45** 233, **P09** 498; epiphyte; montane forest at 1500–1800 m; Pk, Ph, Sl.

17.5.4 **Prosaptia contigua** (G. Forst.) C. Presl, **T04** 593; *Ctenopteris contigua* (G. Forst.) Holttum, **H45** 230, **P09** 501, **P19** 172; on trees and tree-ferns near streams; in the mountains at 900–1700 m; Tg, Pk, Ph, Sl.

17.5.5 **Prosaptia davalliacea** (F. Muell. & Baker) Copel., **P10** 113; *Ctenopteris davalliacea* (F. Muell. & Baker) Parris, **P09** 501; epiphyte; once collected, Pk.

17.5.6 **Prosaptia leysii** (Baker) Ching, **T04** 594; *Ctenopteris leysii* (Baker) Holttum, **H45** 232, **P09** 499; epiphytic on mossy trees near streams; hill forest to 1000 m; Kd, Pk, Ph, Sl, NS, Ml.

17.5.7 **Prosaptia obliquata** (Blume) Mett., **T04** 592; *Ctenopteris obliquata* (Blume) Copel., **H45** 229, **P09** 499, **P19** 171; epiphyte; hill and montane forest at 900–1800 m; Pk, Ph, Sl, NS.

17.6.1 **Scleroglossum crassifolium** (Baker) C. Chr., **P11**; epiphyte.

17.6.2 **Scleroglossum debile** (Mett. *ex* Kuhn) Alderw., **H45** 235, **P09** 516, **P19** 176; epiphyte; hill forest at 600–900 m; Pn, Ph, NS, Ml, Jh.

17.6.3 **Scleroglossum minus** (Fée) C.Chr., **H45** 236, **P09** 515, **P19** 176; on mossy tree trunks; montane forest at 1200–2100 m; Pn, Ph, Sl, Ml.

17.6.4 **Scleroglossum pusillum** (Blume) Alderw., **H45** 234, **P09** 515, **P19** 175; on mossy tree trunks; upper montane forest at 900–1800 m; Pn, Pk, Ph, Sl, Ml, Jh.

17.7.1 **Xiphopteris alternidens** (Ces.) Copel., **P09** 502; on rocks in streams; mountains at 1500–1700 m; Gg Tahan, Ph.

17.7.2 **Xiphopteris cornigera** (Baker) Copel., **P09** 503; *Xiphopteris hieronymusii* (C.Chr.) Holttum, **H45** 218, **P19** 163; on trees in mossy forest; mountains at 1450–1850 m; Pk, Ph, Sl, Ml, Jh.

17.7.3 **Xiphopteris exilis** Parris, **P09** 503, **P10** 121; epiphyte on mossy tree trunks; montane forest at 900 m; known only from type, Gg Belumut, Jh; endemic.

17.7.4 **Xiphopteris musgraviana** (Baker) Parris, **P09** 504; epiphyte; once from Penang Hill.

17.7.5 **Xiphopteris setulifera** (Alderw.) Parris, **P09** 504; poorly known; Pk, Ml.

17.7.6 **Xiphopteris sparsipilosa** (Holttum) Holttum, **H45** 219, **P09** 504, **P19** 164; on mossy tree trunks; montane forest at 1200–1850 m; Pk, Ph, Sl; endemic.

17.7.7 **Xiphopteris subpinnatifida** (Blume) Copel., **P09** 505; once each from Pn and Pk.

18. HYMENOPHYLLACEAE

18.1.1 **Cephalomanes gemmatum** (J.Sm. *ex* Baker) K. Iwatsuki, **I06** 547; *Trichomanes gemmatum* J.Sm. *ex* Baker, **H45** 104; *Trichomanes idoneum* C.V. Morton; **P19** 84; epiphyte; mountain-top forest; Kl, Tg, Ph, Jh.

18.1.2a **Cephalomanes javanicum** (Blume) Bosch var. **asplenoides** (C.Chr.) K. Iwatsuki, **I06** 548; *Trichomanes javanicum* Blume, **H45** 102 in part; epiphyte; only collected on Pulau Tioman.

18.1.2b **Cephalomanes javanicum** (Blume) Bosch var. **javanicum**, **I06** 548; *Trichomanes javanicum* Blume, **H45** 102 in part, **P19** 81; common near streams; lowland and hill forest.

18.1.3 **Cephalomanes meifolium** (Bory *ex* Willd.) K. Iwatsuki, **I06** 546; *Trichomanes meifolium* Bory *ex* Willd., **H45** 103, **P19** 83; terrestrial or on tree bases or fallen logs; montane forest above 1000 m.

18.1.4 **Cephalomanes obscurum** (Blume) K. Iwatsuki, **I06** 547; *Trichomanes obscurum* Blume, **H45** 102, **P19** 87; common on streambanks; lowlands and mountains.

18.1.5 **Cephalomanes setigerum** (Backh. *ex* T. Moore) I.M. Turner, **T21** 26; *Trichomanes setigerum* Backh. *ex* T. Moore, **H45** 104; collected once on Gg Bubu, Pk.

18.1.6 **Cephalomanes singaporeanum** Bosch, **P11**; *Trichomanes singaporeanum* (Bosch) Alderw., **H45** 103, **P19** 82; on rocks and banks; lowland and hill forest.

18.1.7 **Cephalomanes superbum** (Backh. *ex* T. Moore) I.M. Turner, **T21** 26; *Trichomanes superbum* Backh. *ex* T. Moore, **H45** 108; terrestrial; lowland forest; Pk, Jh, Sp.

18.2.1 **Crepidomanes aphlebioides** (H. Christ) I.M. Turner, **T21** 26; *Trichomanes aphlebioides* H. Christ, **H45** 105; in rocky valleys on Gg Panti, Jh.

18.2.2 **Crepidomanes auriculatum** (Blume) K. Iwatsuki, **I06** 528; *Trichomanes auriculatum* Blume, **H45** 105, **P19** 85; climbing on small trees; lower montane forest at 750–1500 m.

18.2.3 **Crepidomanes bipunctatum** (Poir.) Copel., **I06** 536; *Trichomanes bipunctatum* Poir., **H45** 99, **P19** 79; *Trichomanes bilabiatum* Nees & Blume, **H45** 99, **P19** 80; epiphyte of damp, shady forest; lowland and hills.

18.2.4 **Crepidomanes christii** (Copel.) Copel., **I06** 540; *Trichomanes christii* Copel., **H45** 100, **P19** 80; epiphyte; lowland forest; widespread.

18.2.5 **Crepidomanes digitatum** (Sw.) K. Iwatsuki, **I06** 540; *Trichomanes digitatum* Sw., **H45** 94, **P19** 74; on trees and rocks; montane forest, on mangrove trees in the south.

18.2.6 **Crepidomanes humile** (G. Forst.) Bosch, **I06** 532; *Trichomanes humile* G. Forst., **H45** 98, **P19** 78; epiphyte; near shady rivers in the lowlands.

18.2.7 **Crepidomanes kurzii** (Bedd.) Tagawa & K. Iwatsuki, **T05** 613; *Trichomanes kurzii* Bedd., **P12** 7; once from Taman Negara, Ph.

18.2.8 **Crepidomanes latealatum** (Bosch) Copel., **I06** 537; *Trichomanes latealatum* (Bosch) H. Christ, **H45** 101; on rocks and tree trunks; montane forest; Fraser's Hill and Cameron Highlands, Ph.

18.2.9 **Crepidomanes maximum** (Blume) K. Iwatsuki, **I06** 531; *Trichomanes maximum* Blume, **H45** 101, **P19** 86; on wet rocks by streams, all altitudes.

18.2.10 **Crepidomanes minutum** (Blume) K. Iwatsuki, **I06** 524; *Trichomanes minutum* Blume, **H45** 96; *Trichomanes proliferum* Blume, **H45** 97, **P19** 76; *Trichomanes saxifragoides* C. Presl, **P19** 75; on trees and rocks in damp shady forests; lowlands to mountains.

18.2.11 **Crepidomanes pallidum** (Blume) K. Iwatsuki, **I06** 523; *Trichomanes pallidum* Blume, **H45** 97, **P19** 77; on trees and rocks; lowlands to mountains.

18.2.12 **Crepidomanes radicans** (Sw.) K. Iwatsuki var. **nauseanum** (H. Christ) K. Iwatsuki, **I06** 530; *Trichomanes radicans* Sw., **H45** 107; once collected in the Cameron Highlands, Ph.

Crepidomanes latemarginale (Eaton) Copel. [*Trichomanes latemarginale* Eaton, **H45** 101] has been recorded from Pulau Adang which is in Thailand.

18.3.1 **Hymenophyllum acanthoides** (Bosch) Rosenst., **H45** 80, **I06** 512, **P19** 66; on trees and rocks; montane forests, lowlands in the south.

18.3.2 **Hymenophyllum badium** Hook. & Grev., **H45** 82, **I06** 520, **P19** 68; on rocks and tree trunks; in the mountains.

18.3.3 **Hymenophyllum blandum** Racib., **H45** 77, **I06** 511, **P19** 63; on wet trees and rocks; montane forest.

18.3.4 **Hymenophyllum denticulatum** Sw., **H45** 79, **I06** 511, **P19** 79; on trees and rocks; mountains, lowlands in the south.

18.3.5 **Hymenophyllum emarginatum** Sw., **H45** 84; once collected, Gg Batu Puteh, Pk.

18.3.6 **Hymenophyllum exsertum** Wall. *ex* Hook., **H45** 86, **I06** 513, **P19** 71; on mossy trees; montane forest above 1000 m.

18.3.7 **Hymenophyllum holochium** (Bosch) C.Chr., **H45** 77, **I06** 511; on mossy tree trunks and damp rocks; montane forest.

18.3.8 **Hymenophyllum imbricatum** Blume, **H45** 85, **P19** 70; on shady trees; mountains; Cameron Highlands, Ph.

18.3.9 **Hymenophyllum javanicum** Spreng., **H45** 83, **P19** 67; common forest epiphyte; mountains at 1000–1500 m; Main Range.

18.3.10 **Hymenophyllum johorense** Holttum, **H45** 80; epiphyte; montane forest at about 900 m; Gg Belumut, Jh.

18.3.11 **Hymenophyllum penangianum** C.G. Matthew & H. Christ, **H45** 81; on trees; mountain tops; Kd, Pn, Ph, Jh.

18.3.12 **Hymenophyllum polyanthos** Sw., **H45** 81, **I06** 516, **P19** 67; on trees and rocks; all altitudes.

18.3.13 **Hymenophyllum productum** Kunze, **H45** 83, **P19** 69; on rocks and tree trunks; montane forest at 600–1500 m.

18.3.14 **Hymenophyllum serrulatum** (C. Presl) C.Chr., **H45** 78, **I06** 511, **P19** 64; on trees and rocks; montane forest, mangroves and swamp forest in the south.

18.3.15 **Hymenophyllum tenellum** D. Don, **P11**.

18.3.16 **Hymenophyllum treubii** Racib., **H45** 84; epiphyte; montane forest at 900–1300 m.

18.3.17 **Hymenophyllum sp. aff. brachyglossum**, **P14** 7; once from Taman Negara, Ph.

18.4.1 **Sphaerocionium nitidulum** (Alderw.) K. Iwatsuki, **I05** 211, **I06** 522; on tree trunks; montane forest.

18.4.2 **Sphaerocionium palmatifidum** (Müll.Berol.) K. Iwatsuki, **I05** 211, **I06** 211; *Trichomanes palmatifidum* Müll.Berol., **H45** 95; *Trichomanes ridleyi* Copel., **H45** 95; epiphyte; forest on mountain ridges above 1000 m; Taiping Hills, Pk, Fraser's Hill, Cameron Highlands, Gg Tahan, Ph.

18.5.1 **Trichomanes bimarginatum** (Bosch) Bosch, **H45** 92 in part, **I06** 543, **P19** 73; *Microgonium bimarginatum* Bosch, **C33** 520; epiphyte low on trees near streams; Pk, NS, P. Tioman.

18.5.2 **Trichomanes exiguum** (Bedd.) Baker, **H45** 94, **I06** 543, **E01** 167; on wet rocks; hill forest at about 600 m; once at Sg Halong, Pk; once at Genting Simpah, Sl.

18.5.3 **Trichomanes henzaianum** Parish *ex* Hook., **E01** 167; on riverside in lowland forest; once at Sg Halong, Pk.

18.5.4 **Trichomanes mindorense** H. Christ, **C33** in synonymy, *Trichomanes bimarginatum auct. non* (Bosch) Bosch, **H45** 92 in part; *Microgonium mindorense* (H. Christ) Copel., **C33** 522; low level epiphyte; damp lowland forest; Pk, Ph, Sl, Jh, Sp.

18.5.5 **Trichomanes motleyi** (Bosch) Bosch, **H45** 92, **I06** 542; *Microgonium motleyi* Bosch, **C33** 526; epiphyte on trees; damp shady lowland forest; Pk, Ph, Sp.

18.5.6 **Trichomanes sublimbatum** Müll.Berol., **H45** 92, **I06** 542, **P19** 72; *Microgonium sublimbatum* (Müll.Berol.) Bosch, **C33** 527; on rocks and tree trunks; very wet forest to 1500 m; Kd, Pk, Ph, Sl, Sp.

18.5.7 **Trichomanes tahitense** Nadeaud, **I06** 541; *Microgonium tahitense* (Nadeaud) Tindale, **C33** 524; epiphyte; lowland forest; twice collected in Taman Negara, Ph.

19. LOMARIOPSIDACEAE

19.1.1 **Bolbitis appendiculata** (Willd.) K. Iwatsuki, **FMu1** 322, **P19** 354; *Egenolfia appendiculata* (Willd.) J.Sm., **H45** 459; on rocks by streams; lowland and hill forest to 1500 m.

19.1.2 **Bolbitis heteroclita** (C. Presl) Ching, **H45** 462, **FMu1** 325, **P19** 355; *Bolbitis simplicifolia* (Holttum) Ching, **H45** 464; creeping over soil, rocks and tree bases; lowland and hill forest to 1500 m.

19.1.3 **Bolbitis singaporensis** Holttum, **H45** 467, **FMu1** 329; on rocks in stream bed; lowland forest; Bukit Timah, Sp.

19.1.4 **Bolbitis sinuata** (C. Presl) Hennipman, **FMu1** 326, **P19** 357; *Bolbitis diversifolia* (Blume) Schott, **H45** 465; *Bolbitis malaccensis* (C.Chr.) Ching, **H45** 470; *Bolbitis nitens* Holttum, **H45** 470; rocky streams in forest; lowland and hills to 1200 m.

19.1.5 **Bolbitis virens** (Hook. & Grev.) Schott var. **compacta** Hennipman, **FMu1** 321; *Bolbitis virens* (Hook. & Grev.) Schott, **H45** 468, **P19** 359; usually on rocks near streams; lowlands; Kd, Pn, Pk, Sl.

19.2.1 **Elaphoglossum amblyphyllum** P.R. Bell, **FMu1** 303; *Elaphoglossum decurrens* (*non* Desv.) Alderw., **H45** 458; epiphyte on old trees; lowlands to 800 m.

19.2.2 **Elaphoglossum blumeanum** (Fée) J.Sm., **FMu1** 311, **P19** 369; *Elaphoglossum yunnanense auct. non* (Baker) C.Chr., **H45** 455; epiphyte; high mountains to 2000 m.

19.2.3 **Elaphoglossum brevifolium** Holttum, **H45** 458, **FMu1** 307; epiphyte; montane forest at 1400–1850 m; Gg Batu Puteh, Pk; Gg Tahan, Ph.

19.2.3 **Elaphoglossum callifolium** (Blume) T. Moore, **H45** 459, in part, **FMII1** 307, **P19** 370; epiphyte; montane forest at 1000–2000 m.

19.2.4 **Elaphoglossum malayense** Holttum, **FMII1** 308; *Elaphoglossum callifolium auct. non* Blume, **H45** 459 in part; epiphyte; montane forest at 1050–1400 m.

19.2.5 **Elaphoglossum melanostictum** (Blume) T. Moore, **FMII1** 301; *Elaphoglossum peninsulare* Holttum, **H45** 456; epiphyte on tree trunks; lowlands and mountains to 1700 m.

19.2.6 **Elaphoglossum norrisii** (Hook.) Bedd., **FMII1** 301; *Elaphoglossum melanostictum auct. non* (Blume) T. Moore, **H45** 455; on mossy trees and rocks; lowlands and hills to 1500 m.

19.2.7 **Elaphoglossum robinsonii** Holtum, **FMII1** 301, **P19** 371; epiphyte on very mossy trees; montane forest in the cloud zone; Genting Highlands, Ph/Sl; endemic.

19.2.8 **Elaphoglossum spongophyllum** P.R. Bell *ex* Holttum, **FMII1** 310; epiphyte; montane forest at 1550–1850 m; Gg Tahan, Ph.

19.3.1 **Lomagramma perakensis** Bedd., **H45** 478, **FMII1** 281, **P19** 368; climber; montane forest at 600–1400 m.

19.3.2 **Lomagramma sumatrana** Alderw., **H45** 477, **FMII1** 285, **P19** 367; climber; lowland forest near streams.

19.4.1 **Lomariopsis lineata** (C. Presl) Holttum, **FMII1** 262, **P19** 361; *Lomariopsis cochinchinensis* Fée, **H45** 476; climber; damp forest to 1200 m.

19.5.1a **Teratophyllum aculeatum** (Blume) Mett. *ex* Kuhn var. **aculeatum**, **H45** 473, **FMII1** 269; climber; lowland forest.

19.5.1b **Teratophyllum aculeatum** (Blume) Mett. *ex* Kuhn var. **montanum** Holttum, **H45** 473, **FMII1** 269, **P19** 362; climber; montane forest at 1200–1500 m.

19.5.2 **Teratophyllum ludens** (Fée) Holttum, **H45** 474, **FMII1** 275, **P19** 365; climber; freshwater swamp forest.

19.5.3 **Teratophyllum rotundifoliatum** (R. Bonap.) Holttum, **H45** 474, **FMII1** 270, **P19** 364; climber; damp lowland and hill forest at 150–1000 m.

20. MARATTIACEAE

20.1.1 **Angiopteris angustifolia** C. Presl, **H45** 45, **P19** 33; terrestrial; by mountain stream about 1200 m; Pk, Ph.

20.1.2 **Angiopteris evecta** (G. Forst.) Hoffm., **H45** 44, **P19** 31; terrestrial of damp, shady places; lowlands and hills to 1200 m; widespread.

20.2.1 **Christensenia aesculifolia** (Blume) Maxon ssp. **korthalsii** (de Vriese) Rolleri, **H45** 45, **P19** 34, **R28** 16; terrestrial fern of forest shade; lowlands to 800 m; Pk, Sl.

20.2.2 **Christensenia lobbiana** (de Vriese) Rolleri, **R28** 17; terrestrial; lowland forest; Sl.

21. MARSILEACEAE

21.1.1 **Marsilea crenata** C. Presl, **H45** 619, **P19** 442; aquatic common in rice paddies.

21.1.2 **Marsilea scalaripes** D.M. Johnson, **J16** 68; *Marsilea polycarpa auct. non* Hook. & Grev., **H45** 620; aquatic fern; only known from type, Kd; endemic.

22. MATONIACEAE

22.1.1 **Matonia foxworthyi** Copel., **K04** 172; terrestrial; clearings and ridges in montane forest; once from Gg Ledang, Ml.

22.1.2 **Matonia pectinata** R.Br., **H45** 59, **P19** 44, **K04** 172; terrestrial; mountain ridges and summits at 900–1500 m; Kd, Tg, Ph, Jh.

23. OLEANDRACEAE

23.1.1 **Arthropteris palisotii** (Desv.) Alston, **H45** 634, **P19** 382; climber; shady lowland forest; Pk.

23.2.1 **Nephrolepis acutifolia** (Desv.) H. Christ., **H45** 375, **P19** 372; epiphyte; on old trees in the lowlands, often near the sea.

23.2.2 **Nephrolepis auriculata** (L.) Trimen, **A13** 248; *Nephrolepis biserrata* (Sw.) Schott, **H45** 380, **P19** 377; terrestrial; very common lowland fern of open places; widespread.

23.2.3 **Nephrolepis cordifolia** (L.) C. Presl, **H45** 379, **P11**; *Nephrolepis tuberosa* (Bory) C. Presl, **P19** 375; terrestrial; montane forest clearings; Pk, Ph.

23.2.4 **Nephrolepis davalloides** (Sw.) Kunze, **H45** 634, **P19** 374; *Nephrolepis acuminata* (Houtt.) Kuhn, **H45** 378; common epiphyte; highlands.

23.2.5 **Nephrolepis dicksonioides** H. Christ, **H45** 376, **C13** 212, **P19** 373; terrestrial; common on limestone forming dense thickets.

23.2.6 **Nephrolepis falcata** (Cav.) C.Chr., **H45** 381, **P19** 380; on rocks and trees; lowlands and hills.

23.2.7 **Nephrolepis hirsutula** (G. Forst.) C. Presl, **H45** 382, **P11**; *Nephrolepis multiflora* (Roxb.) F.M. Jarett *ex* C.V. Morton, **P19** 381; terrestrial; exposed places in the lowlands and hills.

23.2.8 **Nephrolepis radicans** (Burm.*f.*) Kuhn, **H45** 381, **P19** 176; terrestial or on rocks; lowlands including limestone.

23.3.1 **Oleandra pistillaris** (Sw.) C.Chr., **H45** 386, **P19** 383; shrubby plant, occasionally epiphytic; montane forest.

23.3.2 **Oleandra undulata** (Willd.) Ching, **H45** 384; terrestrial; open places on mountain slopes; Gg Jerai, Kd.

24. OPHIOGLOSSACEAE

24.1.1 **Botrychium daucifolium** Wall. *ex* Hook. & Grev., **H45** 629, **P19** 27; terrestrial; open montane forest a 1450 m; Gg Jasah, Cameron Highlands, Ph.

24.2.1 **Helminthostachys zelanica** (L.) Hook., **H45** 42, **P19** 30; terrestrial; damp, lightly-shaded places; north of Peninsula.

24.3.1 **Ophioglossum costatum** R.Br., **W16** 323; *Ophioglossum pedunculosum* Desv., **H45** 39 in part; terrestial.

24.3.2 **Ophioglossum gramineum** Willd., **W16** 324, **H45** 629; terrestrial, sandy soil.

24.3.3a **Ophioglossum nudicaule** L. var. **macrorhizum** (Kunze) R.T. Clausen, **W16** 324; *Ophioglossum pedunculosum* Desv., **H45** 39 in part; terrestrial; in open places.

24.3.3b **Ophioglossum nudicaule** L. var. **nudicaule**, **W16** 324, **P19** 28; *Ophioglossum pedunculosum* Desv., **H45** 39 in part; terrestrial; in open places.

24.3.4 **Ophioglossum pendulum** L., **H45** 40, **W16** 332, **P19** 29; common epiphyte; lowlands and hills to 1000 m.

24.3.5 **Ophioglossum reticulatum** L., **W16** 327, **P19** 28; *Ophioglossum pedunculosum* Desv., **H45** 39 in part; terrestrial; open places in lowlands and hills.

24.3.6 **Ophioglossum simplex** Ridl. *ex* Bower, **W16** 330; dubiously Malayan.

25. OSMUNDACEAE

25.1.1 **Osmunda javanica** Blume, **H45** 47, **A19** 28, **P19** 35; terrestrial, river banks and damp slopes to about 1200m.

25.1.2 **Osmunda vachellii** Hook., **A19** 31; terrestrial; on river banks and in montane forest; Ph.

26. PARKERIACEAE

26.1.1 **Ceratopteris thalictroides** (L.) Brongn., **H45** 578, **P19** 440; semi-aquatic; lowland ditches and rice fields, widespread.

27. PLAGIOGYRIACEAE

27.1.1 **Plagiogyria adnata** (Blume) Bedd., **H45** 111; terrestrial; collected once on Gg Tahan, Ph.

27.1.2 **Plagiogyria glauca** (Blume) Mett., **H45** 112; terrestrial; collected once, no exact location.

27.1.3 **Plagiogyria tahanensis** Miyam. & H. Ohba, **M43** 31; on rocks; montane forest at about 1600 m; Gg Tahan, Ph; endemic.

27.1.4 **Plagiogyria tuberculata** Copel., **H45** 111, **P19** 88; terrestrial; on high mountain ridges above 1500 m; Cameron Highlands, Ph.

28. POLYPODIACEAE

28.1.1 **Aglaomorpha coronans** (Wall. *ex* Mett.) Copel., **R29** 196; epiphyte up to 25 m from ground; lowlands and hills to 1800 m.

28.1.2 **Aglaomorpha drynarioides** (Hook.) Roos, **R29** 202; *Merinthosorus drynarioides* (Hook.) Copel., **H45** 186, **P19** 140; epiphyte 5–30 m from ground on forest trees; lowlands and hills to 1200 m; Pn, Pk, Ph.

28.1.3 **Aglaomorpha heraclea** (Kunze) Copel., **H45** 185, **R29** 198, **P19** 138; epiphyte upto 25 m from ground; montane forest at 700–1400 m.

28.1.4 **Aglaomorpha speciosa** (Blume) Roos, **R29** 204; *Photinopteris speciosa* (Blume) C. Presl, **H45** 187, **P19** 142; epiphyte; mangroves, riverside trees and in forests to 1600 m.

28.2.1 **Belvisia mucronata** (Fée) Copel., **H45** 155, **H54** 521; *Belvisia callifolia* (C. Chr.) Copel., **H45** 156, **P19** 119; on tree trunks; lowland and hill forest to 1500 m.

28.2.2 **Belvisia spicata** (L.*f.*) Mirbel *ex* Copel., **H54** 524; *Belvisia revoluta* (Blume) Copel., **H45** 155, **P19** 118; epiphyte; montane forest above 900 m; Kd, Pk, Ph, Sl.

28.3.1a **Colysis acuminata** (Baker) Holttum var. **acuminata**, **H45** 162; creeping in lowland forest; Pk, Ph.

28.3.1b **Colysis acuminata** (Baker) Holttum var. **fluminalis** (Ridl.) Hennipman, **V20** 157; *Colysis acuminata* (Baker) Holttum var. *angustata* Holttum, *nom. nud.*, **H45** 163; rheophyte in streambed; base of Gg Raya, P. Langkawi; endemic variety.

28.3.2 **Colysis insignis** (Blume) J.Sm., **B21** 108; *Microsorum insigne* (Blume) Copel., **H45** 174, **P19** 127; *Microsorum hancockii* (Baker) Ching, **H45** 174, **P19** 128; usually on rocks, sometimes on trees or the ground; lowlands and mountains to 2000 m.

28.3.3 **Colysis macrophylla** (Blume) C. Presl, **H45** 160, **P19** 122; climbing low on small trees; lowland forest; Tg, Pk, Jh.

28.3.4 **Colysis pedunculata** (Hook. & Grev.) Ching, **H45** 160, **P19** 121; creeping on rocks or tree trunks; lowlands and hills to 1000 m.

28.3.5 **Colysis pteropus** (Blume) Bosman, **B21** 112; *Microsorum pteropus* (Blume) Copel., **H45** 172, **P19** 126; on wet rocks on forest, sometimes rheophytic; lowlands and hills to 1000 m.

28.4.1 **Drynaria bonii** H. Christ, **R29** 221; epiphyte; P. Langkawi, Pn.

28.4.2 **Drynaria quercifolia** (L.) J.Sm., **H45** 182, **R29** 218, **P19** 214; common old tree epiphyte; lowlands and hills to 1200 m; widespread.

28.4.3 **Drynaria rigidula** (Sw.) Bedd., **H45** 183, **R29** 234, **P19** 137; epiphyte; lowlands and hills; not found south of Malacca.

28.4.4 **Drynaria sparsisora** (Desv.) T. Moore, **H45** 183, **R29** 216, **P19** 136; epiphyte on exposed trees up to 35 m; lowlands and hills to 1400 m; widespread.

28.5.1 **Goniophlebium korthalsii** (Mett.) Bedd., **R25** 379; *Polypodium korthalsii* Mett., **H45** 204; epiphyte; lowland swamps; once collected, Pk.

28.5.2 **Goniophlebium percussum** (Cav.) W.H. Wagner & Grether, **R25** 381; *Polypodium verrucosum* (Hook. & F.A. Bauer) Mett., **H45** 206; *Goniophlebium verrucosum* (Hook. & F.A. Bauer) J.Sm., **P19** 154; epiphyte; lowland and hill forest to 1100 m.

28.5.3 **Goniophlebium persicifolium** (Desv.) Bedd., **P19** 155, **R25** 383; *Polypodium persicifolium* Desv., **H43** 206; on living or dead trees in forests; lowlands to mountains, 150–1900 m.

28.5.4 **Goniophlebium prainii** Bedd., **P19** 153, **R25** 397; *Polypodium prainii* (Bedd.) C.Chr., **H45** 204; low down on mossy trees; montane forest at 1100–1900 m; Pk, Ph, Sl.

28.5.5 **Goniophlebium subauriculatum** (Blume) C. Presl, **P19** 156, **R25** 400; *Polypodium subauriculatum* Blume, **H45** 207; epiphyte on forest trees; 250–2000 m; Pk, Ph, Sl.

28.6.1 **Lecanopteris crustacea** Copel., **G07** 300; *Phymatodes crustacea* (Copel.) Holttum, **H45** 190; ant-inhabited epiphyte; on tall trees in lowlands; Kl, Ph, Ml, Jh, Sp.

28.6.2 **Lecanopteris pumila** Blume *ex* Copel., **G07** 305; *Lecanopteris carnosa* (Reinw.) Blume var. *pumila* (Blume) Alderw., **H45** 210, **P19** 157; common epiphyte; high montane forest above 1000 m.

28.6.3 **Lecanopteris sinuosa** (Wall. *ex* Hook.) Copel., **G07** 301; *Phymatodes sinuosa* (Wall. *ex* Hook.) J.Sm., **H45** 190; *Myrmecopteris sinuosa* (Wall. *ex* Hook.) Pic.Serm., **T18** 13; epiphytic antplant; lowlands.

28.7.1 **Lemmaphyllum accedens** (Blume) Donk, **H45** 152, **P19** 157; epiphyte; on small trees near rivers to 1200 m; Tg, Pk, Ph, Sl, NS, Ml.

28.8.1 **Leptochillus axillaris** (Cav.) Kaulf., **H45** 164; climbing up tree trunks; hill forest; Pk.

28.8.2 **Leptochilus decurrens** Blume, **H45** 164, **P19** 123; on rocks and tree bases; upland forests above 800 m.

28.8.3 **Leptochilus minor** Fée, **H45** 166; collected once P. Tioman.

28.8.4 **Leptochilus normalis** (D. Don) Parris *ined.*, **P11**; *Microsorum normale* (D. Don) Ching, **H45** 175; epiphyte; montane forest about 1500 m; collected once from Cameron Highlands, Ph.

28.9.1 **Loxogramme avenia** (Blume) C. Presl, **H45** 167, **P19** 124; on trees and rocks; lowlands and hills to 1000 m.

28.9.2 **Loxogramme centicola** M.G. Price, **P25** 6; on trees and rocks; lowland and hill forest at 400–1200 m; P. Langkawi, Pk, Ph, Sl.

28.9.3 **Loxogramme scolopendrioides** (Gaudich.) C.V. Morton, **K06** 76; *Loxogramme scolopendrina* (Bory) C. Presl, **H45** 168; on trees and rocks including limestone; lowlands to 300 m; Kd, Pk, Ph.

28.9.4 **Loxogramme wallichiana** (Hook.) M.G. Price, **P23** 61, **P11**; *Loxogramme forbesii* Copel., **H45** 168; epiphyte; Penang Hill & Ulu Brang, Tg.

28.10.1 **Microsorum congregatifolium** (Alderw.) Holttum, **H45** 178, **B21** 79; on shady trees, often near streams; 30–1300 m; Pk.

28.10.2 **Microsorum heterocarpum** (Blume) Ching, **H45** 178, **P19** 132, **B21** 83; terrestrial or epiphytic in dark, damp forest; lowlands to mountains at 2200 m; west of the Main Range.

28.10.3 **Microsorum musifolium** (Blume) Copel., **H45** 176, **P19** 131, **B21** 94; on trees or rocks in forest; lowlands and hills to 900 m; north of Peninsula.

28.10.4 **Microsorum punctatum** (L.) Copel., **H45** 179, **P19** 133, **B21** 97; on trees and old walls; lowlands and hills.

28.11.1 **Neocheiropteris superficialis** (Blume) Bosman, **B21** 121; *Microsorum superficiale* (Blume) Ching, **H45** 632; usually epiphytic in shady forest; hills and mountaints to 2000 m.

28.11.2 **Neocheiropteris zippelii** (Blume) Bosman, **B21** 123; *Microsorum zippelii* (Blume) Ching, **H45** 176, **P19** 130; epiphyte; hill forest at 400–1900 m.

28.12.1 **Paragramma longifolia** (Blume) T. Moore, **P11**; *Lepisorus longifolius* (Blume) Holttum, **H45** 151, **P19** 116; epiphyte; common on trees near rivers; lowlands and hills to 1000 m.

28.13.1 **Phymatosorus longissimus** (Blume) Pic.Serm., **P19** 144; *Phymatodes longissima* (Blume) J.Sm., **H45** 191; epiphyte; lowlands.

28.13.2 **Phymatosorus nigrescens** (Blume) Pic.Serm., **P19** 145; *Phymatodes nigrescens* (Blume) J.Sm., **H45** 193; on trees, occasionally rocks; lowlands; widespread.

28.13.3 **Phymatosorus scolopendria** (Burm.*f.*) Pic.Serm., **P19** 143; *Phymatodes scolopendria* (Burm.*f.*) Ching, **H45** 191; old tree epiphyte; lowlands.

28.13.4 **Phymatosorus sp.**, **B21** 133; *Microsorum sarawakense* (Baker) Ching, **H45** 175, **P19** 129; epiphyte; shady montane forest; Cameron Highlands, Ph.

28.14.1 **Platycerium coronarium** (D. Koenig *ex* O.F. Müll.) Desv., **H45** 138, **H37** 92, **P19** 105; common epiphyte; lowland forest and plantations; widespread.

28.14.2 **Platycerium holttumii** de Jonch. & Hennipman, **H37** 101, **P19** 106; *Platycerium wallichii auct. non* Hook., **H45** 141, **P19** 107; epiphyte; lowland forest to 700 m; north of Peninsula.

28.14.3 **Platycerium lobatum** Bidin & Jaman, **A20** 149; epiphyte low on trees; lowlands; only known from P. Langkawi; endemic.

28.14.4 **Platycerium ridleyi** H. Christ, **H45** 140, **H37** 107; crown epiphyte; wet forests and swamps.

28.15.1 **Pyrrosia angustata** (Sw.) Ching, **H45** 143, **H53** 156, **P19** 108; epiphyte; lowland and hill forest to 900 m.

28.15.2 **Pyrrosia lanceolata** (L.) Farwell, **H53** 191, **P19** 109; *Pyrrosia adnascens* (Sw.) Ching, **H45** 144; common epiphyte; on trees and rocks, particularly near the sea, at low altitudes.

28.15.3 **Pyrrosia longifolia** (Burm.) C.V. Morton, **H45** 148, **H53** 208, **P19** 113; common epiphyte; old trees, both wild and planted, in the lowlands; widespread.

28.15.4 **Pyrrosia nummulariifolia** (Sw.) Ching, **H45** 144, **H53** 214; on exposed trees or rocks; lowlands and hills to 1200 m.

28.15.5 **Pyrrosia penangiana** (Hook.) Holttum, **H45** 146, **C13** 217, **H53** 218, **P19** 111; on exposed trees or rocks, often limestone; northern half of Malaya.

28.15.6 **Pyrrosia piloselloides** (L.) M.G. Price, **R09** 302; *Drymoglossum piloselloides* (L.) C. Presl, **H45** 149, **P19** 115; common on exposed tree trunks and branches; lowlands and hills to 1000 m; throughout.

28.15.7 **Pyrrosia rasamalae** (Racib.) Shing, **H53** 223; *Pyrrosia floccigera auct. non* (Blume) Ching, **H45** 147, **P19** 112; common epiphyte; hill forest at 500–1500 m.

28.15.8 **Pyrrosia stigmosa** (Sw.) Ching, **H45** 148, **C13** 217, **H53** 252, **P19** 114; on limestone, occasionally epiphytic; lowlands and hills.

28.16.1 **Selliguea albidosquamata** (Blume) Parris, **P12** 152; *Crypsinus albidosquamatus* (Blume) Copel., **H45** 195; epiphyte; once collected in Pk.

28.16.2 **Selliguea enervis** (Cav.) Ching, **P12** 151; *Crypsinus enervis* (Cav.) Copel., **T04** 557; *Crypsinopsis enervis* (Cav.) Pic.Serm., **P19** 149; epiphyte; lowland and hill forest to 1200 m.

28.16.3 **Selliguea heterocarpa** (Blume) Blume, **H45** 157; on rocks or tree trunks; lowland and hill forest to 1200 m.

28.16.4 **Selliguea laciniata** (C. Presl) Parris *ined.*, **P11**; *Crypsinus laciniata* (C. Presl) Holttum, **H45** 198; *Phymatopteris laciniata* (C. Presl) Pic.Serm., **P19** 147; epiphyte; montane forest above 1200 m.

28.16.5 **Selliguea lima** (Alderw.) Holttum, **H45** 157, **P19** 120; epiphyte of mossy trees; high mountains; Fraser's Hill and Cameron Highlands, Ph.

28.16.6 **Selliguea metacoela** (Alderw.) Parris, **P12** 152; *Pycnoloma metacoelum* (Alderw.) C. Chr., **H45** 208, **P19** 157; epiphyte; lowland forest; Kd, Kl, Tg, Sl.

28.16.7 **Selliguea platyphylla** (Sw.) Ching, **P12** 151; *Crypsinus platyphyllus* (Sw.) Copel., **H45** 198; *Crypsinopsis platyphyllus* (Sw.) Pic.Serm., **P19** 148; high level epiphyte; montane forest at 900–1200 m.

28.16.8 **Selliguea stenophylla** (Blume) Parris, **P12** 151; *Crypsinus stenophyllus* (Blume) Holttum, **H45** 199, **P19** 151; epiphyte; lowland and hill forest to 1500 m.

28.16.9 **Selliguea subfasciata** (Holttum) Parris *ined.*, **P11**; *Crypsinus subfasciatus* (Holttum) Holttum, **H45** 202; *Crypsinopsis subfasciatus* (Holttum) Pic.Serm., **P19** 150; small epiphyte; known only from Fraser's Hill, Ph; endemic.

28.16.10a **Selliguea taeniata** (Sw.) Parris var. **palmata** (Blume) Parris, **P12** 152; *Crypsinus taeniatus* (Sw.) Copel. var. *palmatus* (Blume) C. Chr., **H45** 197; on trees and rocks in shade; hills and mountains; Tg, Ph.

28.16.10b **Selliguea taeniata** (Sw.) Parris var. **taeniata**, **P12** 152; *Crypsinus taeniatus* (Sw.) Copel. var. *taeniatus*, **H45** 195; on trees and rocks in shade; hills and mountains; Pn, Pk.

28.16.11 **Selliguea triloba** (Houtt.) M.G. Price, **P12** 152; *Crypsinus trilobus* (Houtt) Copel., **H45** 197; *Phymatopteris triloba* (Houtt.) Pic.Serm., **P19** 146; epiphyte; montane forest.

28.16.12 **Selliguea wrayi** (Baker) Parris *ined.*, **P11**; *Crypsinus wrayi* (Baker) Copel., **H45** 200, **P19** 152; common epiphyte; montane forest about 1500 m; Pk, Ph.

28.17.1 **Thylacopteris papillosa** (Blume) Kunze *ex* J.Sm., **K06** 75, **R26** 361; *Polypodium papillosum* Blume, **H45** 203; on rocks near streams in forests; lowland forest to 400 m; north of Peninsula.

29. PTERIDACEAE

29.1.1 **Acrostichum aureum** L., **H45** 409, **P19** 232; terrestrial to 4 m tall; mangroves and damp ground near the sea; all coasts.

29.1.2 **Acrostichum speciosum** Willd., **H45** 410, **P19** 233; terrestrial, usually less than 2 m tall; seaward parts of mangrove swamps; all coasts.

29.2.1 **Pteris biaurata** L., **H45** 407, **P19** 230; terrestrial; lowlands and mountains; mostly in the north.

29.2.2 **Pteris dalhousiae** Hook., **H45** 401; terrestrial; forests; Pn, Jh.

29.2.3 **Pteris ensiformis** Burm.*f.*, **H45** 399, **P19** 224; terrestrial; partially shaded conditions in the lowlands and hills; widespread.

29.2.4 **Pteris excelsa** Gaudich., **H45** 403; terrestrial; once collected, at 600 m; Taiping Hlls, Pk.

29.2.5 **Pteris grevilleana** Wall. *ex* J. Agardh, **H45** 402; terrestrial; lowland and hill forest to 700 m; north of Peninsula.

29.2.6 **Pteris insignis** Mett. *ex* Kuhn, **H45** 398; terrestrial; montane forest at 1800 m; once collected from Gg Kerbau, Pk.

29.2.7 **Pteris longipinnula** Wall. *ex* J. Agardh, **H45** 404, **C13** 213, **P19** 228; terrestrial; lowland and hill forest, often on limestone.

29.2.8 **Pteris mertensioides** Willd., **H45** 404, **P19** 227; terrestrial; in shady forests, often near streams, to 1000 m; widespread.

29.2.9 **Pteris oppositipinnata** Fée, **K05** 163; *Pteris asperula* J.Sm. *ex* Hieron., **H45** 406, **P19** 229; terrestrial; lowland and hill forest; Pl, Sl, Jh.

29.2.10 **Pteris scabripes** Wall *ex* J. Agardh, **H45** 399; on rocks near streams; lowland forest; Pn, Ph.

29.2.11 **Pteris semipinnata** L., **H45** 401, **P19** 226; terrestrial; partial shade in lowlands; widespread, apparently expanding in range.

29.2.12 **Pteris tripartita** Sw., **H45** 408, **P19** 231; terrestrial; open places in the lowlands.

29.2.13 **Pteris venulosa** Blume, **H45** 400, **P19** 225; terrestrial; by forest streams in the hills at 400–900 m.

29.2.14 **Pteris vittata** L., **H45** 396, **P19** 223; in open places and on walls at all altitudes; widespread.

30. SALVINIACEAE

30.1.1 **Salvinia cucullata** Roxb. *ex* Bory, **H45** 621, **T04** 604, **M47** 510; free floating in lowland water bodies; north of Malaya.

30.1.2 **Salvinia molesta** D.S. Mitchell, **P19** 143, **M47** 512; *Salvinia oblongifolia auct. non* Mart., **H45** 621; *Salvinia auriculata auct. non* Aubl., **H45** 638; floating fern; ponds and ditches; widespread; naturalized from tropical America.

31. SCHIZAEACEAE

31.1.1 **Lygodium borneense** Alderw., **H45** 56, **FMu1** 55; climber; freshwater swamp forest; collected only near Sg Sedili, Jh.

31.1.2 **Lygodium circinnatum** (Burm.*f.*) Sw., **H45** 55, **FMu1** 59, **P19** 38; climber; lowland to montane forest at 1500 m.

31.1.3 **Lygodium flexuosum** (L.) Sw., **H45** 57 in part, **FMII1** 53, **P19** 41; climber; common in secondary vegetation to 1000 m.

31.1.4 **Lygodium japonicum** (Thunb.) Sw., **FMII1** 51, **W10** 246; climber; naturalized in Sp.

31.1.5 **Lygodium longifolium** (Willd.) Sw., **FMII1** 59, **P19** 39; *Lygodium digitatum* C. Presl, **H45** 55; climber on exposed lowland forest edges.

31.1.6 **Lygodium microphyllum** (Cav.) R.Br., **FMII1** 47, **P19** 42; *Lygodium scandens* Sw., **H43** 58; climber; forest margins to 1300 m.

31.1.7 **Lygodium polystachyum** Wall. *ex* T. Moore, **H45** 56, **FMII1** 46, **C13** 217; climber; most frequently in forest on limestone; P. Langkawi, Pn, Kl, Pk, Ph.

31.1.8 **Lygodium salicifolium** C. Presl, **FMII1** 51, **P19** 40; *Lygodium flexuosum auct. non* (L.) Sw., **H45** 57 in part; climber; secondary forest and at roadsides to 1200 m.

31.2.1 **Schizaea dichotoma** (L.) J. Sm., **H45** 50, **FMII1** 41; terrestrial; on lightly-shaded sandy soils to 1000 m.

31.2.2 **Schizaea digitata** (L.) Sw., **H45** 51, **FMII1** 41, **P19** 36; terrestrial; drier sorts of plantation and forest.

31.2.3 **Schizaea fistulosa** Labill., **K47** 200; terrestrial; open sandy areas; Ulu Endau, Jh.

31.2.4 **Schizaea inopinata** Selling, **H45** 52, **FMII1** 42, **C13** 217; on limestone to 300 m; Kl, Ph, Sl.

31.2.5a **Schizaea malaccana** Baker var. **malaccana**, **FMII1** 44, **H45** 52, **P19** 37; terrestrial; mossy places in montane forest; Sl, Jh.

31.2.5b **Schizaea malaccana** Baker var. **robustior** C. Chr., **P13** 7; terrestrial; Taman Negara, Ph.

31.2.6 **Schizaea wagneri** Selling, **H45** 52, **FMII1** 44; terrestrial; Kd, Pk, Sp.

32. THELYPTERIDACEAE

32.1.1 **Ampelopteris prolifera** (Retz.) Copel., **H45** 299, **FMII1** 387; terrestrial; on river banks; Kinta River, Pk.

32.2.1 **Amphineuron immersum** (Blume) Holttum, **FMII1** 547, **P19** 214; *Thelypteris immersa* (Blume) Ching, **H45** 243; terrestrial; near streams, sometimes on limestone; low altitudes.

32.2.2 **Amphineuron opulentum** (Kaulf.) Holttum, **FMII1** 548, **P19** 215; *Cyclosorus extensus* (Blume) Ching, **H45** 264; terrestrial; open rocky places.

32.2.3 **Amphineuron terminans** (Hook.) Holttum, **FMII1** 545; *Cyclosorus interruptus sensu* Holttum, **H45** 262; terrestrial; open places.

32.3.1 **Chingia clavipilosa** Holttum, **FMII1** 393, **P19** 194, terrestrial; Gg Brinchang, Cameron Highlands, Ph.

32.3.2 **Chingia perrigida** (Alderw.) Holttum, **FMII1** 394, **P19** 195; terrestrial; in secondary growth on mountains at about 1500 m; Genting Highlands, Ph.

32.3.3a **Chingia sakayensis** (Zeiller) Holttum var. **eglandulosa** Holttum, **P19** 193; terrestrial; Gg Brinchang, Cameron Highlands, Ph; endemic variety.

32.3.3b **Chingia sakayensis** (Zeiller) Holttum var. **sakayensis**, **FMII1** 392, **P19** 192; *Cyclosorus ferox sensu* Holttum, **H45** 265; terrestrial; in forests near streams; lowlands and hills to 1200 m.

32.4.1 **Christella arida** (D.Don) Holttum, **FMII1** 555, **P19** 216; *Cyclosorus aridus* (D.Don) Ching, **H45** 259; terrestrial; mostly in grassy places in the lowlands.

32.4.2 **Christella dentata** (Forssk.) Brownsey & Jermy, **FMII1** 557; *Cyclosorus subpubescens auct. non* (Blume) Ching, **H45** 273; terrestrial; common in plantations to 1500 m.

32.4.3 **Christella hispidula** (Decne.) Holttum, **FMII1** 557; *Cyclosorus contiguus* (Rosenst.) Ching, **H43** 282; terrestrial; lowlands and hills to 1500 m.

32.4.4 **Christella papilio** (C. Hope) Holttum, **FMII1** 556, **P19** 217; *Cyclosorus papilio* (C. Hope) Ching, **H45** 633; terrestrial; hill forest at 600–900 m; north of Peninsula.

32.4.5 **Christella parasitica** (L.) Lév., **FMII1** 559, **P19** 221; *Cyclosorus parasiticus* (L.) Farwell, **H45** 281; terrestrial; open grassy places to 1500 m.

32.4.6 **Christella siamensis** (Tagawa & K. Iwatsuki) Holttum, **P19** 218; terrestrial; open grassy places in the mountains; Cameron Highlands, Ph.

32.4.7 **Christella subpubescens** (Blume) Holttum, **FMII1** 588, **P19** 220; *Cyclosorus latipinna* (Hook.) Tardieu, **H45** 276; *Cyclosorus sumatranus* (Alderw.) Ching, **H45** 275; terrestrial; open places at low to mid altitudes.

32.5.1 **Coryphopteris arthrotricha** Holttum, **FMII1** 363; *Thelypteris viscosa sensu* Holttum, **H45** 252 in part; terrestrial; montane forest; Cameron Highlands, Ph.

32.5.2 **Coryphopteris badia** (Alderw.) Holttum, **FMII1** 369; terrestrial; montane rain forest at 1400–2000 m.

32.5.3a **Coryphopteris gymnopoda** (Baker) Holttum var. **bintangensis** Holttum, **FMII1** 361; terrestrial; montane forest; Gg Bintang, Kd/Pk; Gg Ulu Kali, Ph; endemic variety.

32.5.3b **Coryphopteris gymnopoda** (Baker) Holttum var. **gymnopoda**, **FMII1** 361; *Coryphopteris gymnopoda* (Baker) Holttum, **P19** 182; *Thelypteris viscosa sensu* Holttum, **H45** 252 in part; terrestrial; montane forest.

32.5.3c **Coryphopteris gymnopoda** (Baker) var. **humilis** Holttum, **FMII1** 361; terrestrial; montane forest; Gg Perdah, Cameron Highlands, Ph; endemic variety.

32.5.4 **Coryphopteris hirsutipes** (C.B. Clarke) Holttum, **FMII1** 359; *Thelypteris herbacea* Holttum, **H45** 254; terrestrial; montane forest; Gg Padang, Tg, Gg Tahan, Ph.

32.5.5 **Coryphopteris holtummii** Parris *ined.*, **P11**; terrestrial; Gg Jasar, Cameron Highlands, Ph; endemic.

32.5.6a **Coryphopteris pectiniformis** (C.Chr.) Holttum var. **hirsuta** Holttum, **FMII1** 363; *Thelypteris pectiniformis* (C.Chr.) Ching, **H45** 253 in part; terrestrial; montane forest; Pine-Tree Hill and Fraser's Hill, Ph; endemic variety.

32.5.6b **Coryphopteris pectiniformis** (C.Chr.) Holttum var. **pectiniformis**, **FMII1** 363; *Thelypteris pectiniformis* (C.Chr.) Ching, **H45** 253 in part; terrestrial; montane forest; Tg, Ph.

32.5.7 **Coryphopteris tahanensis** Holttum, **FMII1** 363, **P19** 183; terrestrial; montane forest at about 1800 m; Gg Tahan and Main Range; endemic.

32.5.8 **Coryphopteris unidentata** (Bedd.) Holttum, **FMII1** 359; *Thelypteris unidentata* (Bedd.) Holttum, **H45** 251; terrestrial; montane forest; Gg Bubu, Gg Bintang & Gg Inas, Pk; endemic.

32.5.9 **Coryphopteris viscosa** (Baker) Holttum, **FMII1** 360; *Thelypteris viscosa* (Baker) Ching, **H45** 252 in part; terrestrial; forest on mountain ridges; Gg Ledang, Ml.

32.6.1 **Cyclosorus interruptus** (Willd.) H. Itô, **FMII1** 386, **P19** 191; *Cyclosorus gongylodes sensu* Holttum, **H45** 261; terrestrial; common in damp grassy places to 600 m.

32.7.1 **Macrothelpteris torresiana** (Gaudich.) Ching, **FMII1** 348, **P19** 179; *Thelypteris uliginosa* (Kunze) Ching, **H45** 241; terrestrial; open grassy places in the lowlands and mountains.

32.8.1 **Mesophlebion beccarianum** (Ces.) Holttum, **FMII1** 383; terrestrial; in forest at 200–1200 m; south of Peninsula.

32.8.2 **Mesophlebion chylamydophorum** (Rosenst. *ex* C.Chr.) Holttum, **FMii1** 384, **P19** 189; *Thelypteris chylamydophora* (Rosenst. *ex* C.Chr.) Ching, **H45** 246; terrestrial; lowlands forests, particularly in swamps.

32.8.3 **Mesophlebion crassifolium** (Blume) Holttum, **FMii1** 384, **P19** 190; *Thelypteris crassifolia* (Blume) Ching, **H45** 246; terrestrial; hill forest at 700–1800 m.

32.8.4 **Mesophlebion motleyanum** (Hook.) Holttum, **FMii1** 381; *Thelypteris motleyana* (Hook.) Holttum, **H45** 247; terrestrial; lowland and hill forest to 1200 m.

32.8.5 **Mesophlebion trichopodum** (C.Chr.) Holttum, **FMii1** 380, **P19** 286; *Thelypteris paleata* (Copel.) Holttum, **H45** 249; terrestrial; near streams in forest to 1000 m.

32.9.1 **Metathelypteris dayii** (Baker) Holttum, **FMii1** 352, **P19** 181; *Thelypteris singalanensis sensu* Holttum, **H45** 243 in part; terrestrial; on open banks in the highlands, Taiping Hills, Pk; Fraser's Hill, Cameron Highlands, Ph.

32.9.2 **Metathelypteris flaccida** (Blume) Ching, **FMii1** 351, **P19** 180; terrestrial; on exposed earth banks in the highlands; Taiping Hills, Pk, Cameron Highlands, Ph.

32.9.3 **Metathelypteris gracilescens** (Blume) Ching, **FMii1** 351; terrestrial; montane forest at 1500–2200 m; once collected in Cameron Highlands.

32.10.1 **Parathelypteris beddomei** (Baker) Ching, **FMii1** 371, **P19** 184; *Thelypteris beddomei* (Baker) Ching, **H45** 240; terrestrial; open places in the mountains at 1500–2000 m; Taiping Hills, Pk, Cameron Highlands, Ph.

32.11.1 **Pneumatopteris callosa** (Blume) Nakai, **FMii1** 419, **P19** 196; *Cyclosorus dicranogramma sensu* Holttum, **H45** 267; terrestrial; open places near mountain streams at 600–1750 m; Cameron Highlands, Ph.

32.11.2 **Pneumatopteris ecallosa** (Holttum) Holttum, **FMii1** 425, **P19** 197; *Cyclosorus ecallosa* Holttum, **H45** 272; terrestrial; near streams in montane forest at about 1500 m; Cameron Highlands, Genting Highlands, Ph; endemic.

32.11.3 **Pneumatopteris truncata** (Poir.) Holttum, **FMii1** 429, **P19** 198; *Cyclosorus truncata* (Poir.) Holttum, **H45** 266; shady places near streams to 1200 m.

32.12.1 **Pronephrium asperum** (C. Presl) Holttum, **FMii1** 512, **P19** 206; *Abacopteris multilineata* (Wall. *ex* Hook.) Ching var. *malayensis* Holttum, *nom. nud.*, **H45** 297; terrestrial; near streams in lowland and hill forest.

32.12.2 **Pronephrium glandulosum** (Blume) Holttum, **FMII1** 522, **P19** 207; *Cyclosorus glandulosus* (Blume) Ching, **H45** 278; terrestrial; near streams in forest to 800 m.

32.12.3 **Pronephrium menisciicarpon** (Blume) Holttum, **FMII1** 526, **P19** 208; *Abacopteris menisciicarpa* (Blume) Holtuum, **H45** 290; terrestrial; lowland forest near streams.

32.12.4 **Pronephrium** x **parishii** (Bedd.) Holttum, **FMII1** 535; *Abacopteris triphylla* (Sw.) Ching var. *parishii* (Bedd.) Ching, **H43** 287; terrestrial; dry streams in lowland forest; Pk, Ph.

32.12.5 **Pronephrium peltatum** (Alderw.) Holttum var. **peninsulare** Holttum, **FMII1** 530; terrestrial; montane forest above 900 m; Main Range and Taiping Hills; endemic variety.

32.12.6 **Pronephrium repandum** (Fée) Holttum, **FMII1** 533, **P19** 209; *Abacopteris urophylla* (Mett.) Ching, **H45** 296; terrestrial; shady lowland and hill forest.

32.12.7 **Pronephrium rubicundum** (Alderw.) Holttum, **FMII1** 536, **P19** 213; *Abacopteris rubicunda* (Alderw.) Holttum, **H45** 292; terrestrial; lowland forest to 800 m.

32.12.8 **Pronephrium salicifolium** (Wall. *ex* Hook.) Holttum, **FMII1** 535, **P19** 211; *Abacopteris salicifolia* (Wall. *ex* Hook.) Holttum; **H45** 288; rheophyte; lowlands below 500 m.

32.12.9 **Pronephrium triphyllum** (Sw.) Holttum, **FMII1** 534, **P19** 210; *Abacopteris triphylla* (Sw.) Ching, **H45** 287; terrestrial; lowlands near partial shade.

32.13.1 **Pseudophegopteris paludosa** (Blume) Ching, **FMII1** 347, **P19** 178; *Thelypteris brunnea sensu* Ching, **H45** 240; terrestrial; montane forest at 1200–2000 m.

32.13.2 **Pseudophegopteris rectangularis** (Zoll.) Holttum, **FMII1** 346, **P19** 177; *Thelypteris oppositipinna* (Alderw.) Ching, **H43** 239; terrestrial; by mountain streams at 1000–1500 m.

32.14.1 **Sphaerostephanos hendersonii** Holttum, **FMII1** 493; terrestrial; montane forest at about 1500 m; Cameron Highlands, Ph.

32.14.2 **Sphaerostephanus heterocarpus** (Blume) Holttum, **FMII1** 457, **P19** 201; *Cyclosorus heterocarpus* (Blume) Ching, **H45** 269; shady places near streams; lowlands and mountains to 1500 m.

32.14.3 **Sphaerostephanos larutensis** (Bedd.) C.Chr., **FMII1** 489, **P19** 205; *Cyclosorus larutensis* (Bedd.) Ching, **H45** 284; terrestrial; forest near streams to 1000 m.

32.14.4 **Sphaerostephanos latebrosus** (Kunze *ex* Mett.) Holttum, **FMII1** 471; terrestrial; lowland and hill forest to 800 m.

32.14.5 **Sphaerostephanos norrisii** (Rosenst.) Holttum, **FMII1** 485; *Cyclosorus toppingii* [*non* (Copel.) Ching] Holttum, **H45** 280, terrestrial; montane forest at 1000–1500 m; Cameron Highlands, Ph.

32.14.6 **Sphaerostephanos peltochlamys** (C.Chr.) Holttum, **FMII1** 495; *Abacopteris peltochlamys* (C.Chr.) Holttum, **H45** 295; terrestrial; lowland forest; Kl.

32.14.7 **Sphaerostephanos penniger** (Hook.) Holttum, **FMII1** 461, **P19** 202; *Cyclosorus megaphyllus* (Mett.) Ching, **H45** 268; terrestrial; near streams in the hills.

32.14.8 **Sphaerostephanos polycarpus** (Blume) Copel., **FMII1** 448, **P19** 199; *Cyclosorus polycarpus* (Blume) Holttum, **H45** 283; terrestrial; common in open places near streams; lowlands and mountains to 1800 m.

32.14.9 **Sphaerostephanos porphyricola** (Copel.) Holttum, **FMII1** 472, **P19** 203; *Cyclosorus porphyricola* (Copel.) Ching, **H45** 271; terrestrial; near shady streams.

32.14.10a **Sphaerostephanos pterosporus** (Alderw.) Holtuum var. **altilobus** Holttum, **FMII1** 487; terrestrial; lower montane forest at 750–900 m; Pk; endemic variety.

32.14.10b **Sphaerostephanos pterosporus** (Alderw.) Holttum var. **pterosporus**, **FMII1** 487; terrestrial; lowlands and hills to 700 m; widespread in the south.

32.14.11 **Sphaerostephanos unitus** (L.) Holttum, **FMII1** 477; *Cyclosorus unitus* (L.) Ching, **H43** 260; terrestrial; open places at low altitudes.

32.15.1 **Trigonospora ciliata** (Benth.) Holttum, **FMII1** 375, **P19** 185; *Thelypteris ciliata* (Wall.) Ching, **H45** 250; terrestrial; on rocks beside montane forest streams; north of Peninsula.

33. VITTARIACEAE

33.1.1 **Antrophyum callifolium** Blume, **H45** 605, **P19** 433; on rocks and tree trunks; lowland and hill forest.

33.1.2 **Antrophyum latifolium** Blume, **H45** 607, **P19** 436; on banks and rocks; montane forest.

33.1.3 **Antrophyum parvulum** Blume, **H45** 607, **C13** 207, **P19** 434; usually on limestone

33.1.4 **Antrophyum semicostatum** Blume, **H45** 607, **P19** 435; epiphyte; montane forest.

33.2.1 **Monogramma dareicarpa** Hook., **H45** 615; low level epiphyte; dark, damp lowland forest; Jh, Sp.

33.3.1 **Vaginularia trichoidea** Fée, **T03** 229; *Monogramma trichoidea* (Fée) J.Sm. *ex* Hook. & Baker, **H45** 616, **P19** 432; on trees and rocks in deep shade; to about 1000 m.

33.4.1 **Vittaria angustifolia** Blume, **H45** 610, **P19** 429; on trees and rocks; montane forest.

33.4.2 **Vittaria angustissima** Holttum, **H45** 610; epiphyte; Gg Kerbau, Pk, Fraser's Hill, Ph.

33.4.3a **Vittaria elongata** Sw. var. **angustifolia** Holttum, *nom. nud.*, **H45** 614; epiphyte; north of Malaya.

33.4.3b **Vittaria elongata** Sw. var. **elongata**, **H45** 614, **P19** 431; common epiphyte, occasionally on rocks; to 1200 m.

33.4.4a **Vittaria ensiformis** Sw. var. **ensiformis**, **H45** 613, **P19** 430; epiphyte; common on palm trunks with persistent leaf bases; throughout.

33.4.4a **Vittaria ensiformis** Sw. var. **latifolia** Holttum, *nom. nud.*, **H45** 614; epiphyte; Pk, Ph, NS, Jh.

33.4.5 **Vittaria flexuosa** Fée, **H45** 611; epiphyte; twice collected, Pn, Pk.

33.4.6 **Vittaria hirta** Fée, **H45** 609; epiphyte; lowland forest; once collected, Ph.

33.4.7 **Vittaria malayensis** Holttum, **H45** 609, **P19** 428; on trees at high altitudes; about 1500 m; Fraser's Hill, Cameron Highlands, Ph; endemic.

33.4.8 **Vittaria scolopendrina** (Bory) Thwaites, **H45** 611; on trees by rivers and in swamps.

33.4.9 **Vittaria sessilifrons** Miyam. & H. Ohba, **M43** 33; on mossy tree trunks near streams; forest at 200–700 m; Gg Tahan, Ph; endemic.

34. WOODSIACEAE

34.1.1 **Acystopteris tenuisecta** (Blume) Tagawa, **P19** 289; *Cystopteris tenuisecta* (Blume) Mett., **H45** 540; stream banks and roadsides; Cameron Highlands, Ph.

34.2.1 **Athyrium anisopterum** H. Christ, **P19** 290; *Athyrium macrocarpum auct. non* (Blume) Bedd., **H45** 550; on rocks in and near streams in montane forest; Cameron Highlands, Ph.

34.2.2 **Athyrium appendiculiferum** Alderw., **H45** 565; damp montane forests; about 1500 m; Cameron Highlands, Ph.

34.3.1 **Deparia boryana** (Willd.) M. Kato, **K03** 386, **P11**; *Athyrium boryanum* (Willd.) Tagawa, **H45** 567; in or near hill streams at 300 m–500 m; Pk.

34.3.2 **Deparia petersenii** (Kunze) M. Kato ssp. **deflexa** (Kunze) M. Kato, **K03** 425, **P11**; *Athyrium japonicum* (Thunb.) Copel., **H45** 551; *Lunathyrium japonicum* (Thunb.) Kurata, **P19** 291; roadside banks in light shade; Taiping Hills, Pk, Fraser's Hill, Ph.

34.4.1 **Diplaziopsis heterophlebia** (Mett. *ex* Baker) M.G. Price, **P11**; *Athyrium heterophlebium* (Mett. *ex* Baker) Copel., **H45** 549; *Diplazium heterophlebium* (Mett. *ex* Baker) Diels, **T03** 451; in forest near streams; about 1000 m; Ulu Sg Bertam, Ph.

34.5.1 **Diplazium accedens** Blume, **P19** 303; *Athyrium accedens* (Blume) Milde, **H45** 558; *Callipteris prolifera* (Lam.) Bory, **P11**; by shady streams in the mountains.

34.5.2 **Diplazium allantoideum** M.G. Price, **P24** 195, **P11**; *Diplazium silvaticum auct. non* (Bory) Sw., **P19** 307; *Athyrium pinnatum* (Blanco) Copel., **H45** 560; in forests to 1200 m.

34.5.3 **Diplazium amplissimum** (Baker) Diels, **H45** 638; *Athyrium amplissimum* (Baker) Holttum, **H45** 569; Cameron Highlands, Ph.

34.5.4 **Diplazium angustipinna** (Holttum) Holttum, **P19** 294; *Athyrium angustipinna* Holttum, **H43** 459; in shady hill forest at about 1000 m; Gg Batu Puteh, Pk, Fraser's Hill, Ph; endemic

34.5.5 **Diplazium angustisquamatum** (Holttum) Parris, **P08** 118, **P11**; *Athyrium angustisquamatum* Holttum, **H45** 570; twice collected; Genting Simpah, Fraser's Hill, Ph; endemic.

34.5.6 **Diplazium bantamense** Blume, **P19** 305; *Athyrium bantamense* (Blume) Milde, **H45** 558; usually in moist hill forest.

34.5.7a **Diplazium cordifolium** Blume var. **cordifolium**, **P19** 293; *Athyrium cordifolium* (Blume) Copel., **H45** 548; terrestrial; lowland and montane forest.

34.5.7b **Diplazium cordifolium** Blume var. **pariens** (Copel.) C. Chr., **P11**; terrestrial.

34.5.8 **Diplazium crenatoserratum** (Blume) T. Moore, **P19** 308; *Athyrium crenatoserratum* (Blume) Milde, **H45** 561; terrestrial; lowland and hill forest to 1000 m.

34.5.9 **Diplazium curtisii** (Holttum) Holttum, **H45** 637; *Athyrium curtisii* Holttum, **H43** 560; lowlands; Pk, Sl.

34.5.10 **Diplazium dilatatum** Blume, **P19** 316; *Athyrium dilatatum* (Blume) Milde, **H45** 574; near shaded hill streams; 400–1500 m; Fraser's Hill and Cameron Highlands, Ph.

34.5.11 **Diplazium donianum** (Mett.) Tardieu, **H45** 637; Fraser's Hill, Ph.

34.5.12 **Diplazium esculentum** (Retz.) Sw., **P19** 309; *Athyrium esculentum* (Retz.) Sw., **H43** 562; edible fern of open wet places in the lowlands to 800 m.

34.5.13 **Diplazium insigne** Holttum, **H45** 637; *Athyrium insigne* (Holttum) Holttum, **H45** 562; twice collected; Taiping Hills, Pk, Fraser's Hill, Ph; endemic.

34.5.14 **Diplazium kunstleri** Holttum, **P19** 310; *Athyrium kunstleri* (Holttum) Holttum, **H45** 564; near shady hill streams at about 1000 m; Ph, Sl, Jh; endemic.

34.5.15 **Diplazium latisquamatam** Holttum, **H45** 637; *Athyrium latisquamatam* (Holttum) Holttum, **H45** 563; montane forest near streams; 1000–1500 m; Cameron Highlands and Fraser's Hill, Ph.

34.5.16 **Diplazium malaccense** C. Presl, **P19** 297; *Athyrium malaccense* (C. Presl) Holttum, **H45** 552; lowland to mid-montane forest.

34.5.17 **Diplazium pallidum** (Blume) T. Moore, **P19** 301; *Athyrium montanum* (Alderw.) Holttum, **H45** 555; shady hill and montane forest.

34.5.18 **Diplazium polypodioides** Blume, **T03** 465; *Athyrium asperum* (Blume) Milde, **H45** 571; *Diplazium asperum* Blume, **P19** 313; wet forest edges to 1000 m.

34.5.19 **Diplazium prescottianum** (Wall. *ex* Hook.) T. Moore, **T03** 457; *Athyrium prescottianum* (Wall. *ex* Hook.) Holttum, **H45** 557; in forests; Pk, Sl, Sp.

34.5.20 **Diplazium procumbens** Holttum, **H45** 638; *Athyrium procumbens* (Holttum) Holttum, **H45** 572; streamsides in forest; Fraser's Hill, Ph; endemic.

34.5.21 **Diplazium riparium** Holttum, **P19** 300; *Athyrium riparium* (Holttum) Holttum, **H45** 554; stream banks in lowland forests.

34.5.22 **Diplazium simplicivenium** Holttum, **P19** 315; *Athyrium simplicivenium* (Holttum) Holttum, **H45** 573; shady forest valleys near streams; 400–1500 m; Pk, Ph.

34.5.23 **Diplazium sorzogonense** (C. Presl) C. Presl, **P19** 296; *Athyrium sorzogonense* (C. Presl) Milde, **H45** 552; drier spots in mid- to upper-elevation forests; 600–1400 m.

34.5.24a **Diplazium speciosum** Blume var. **major** Bedd., **H45** 560 in synonymy, **P11**; *Athyrium speciosum* (Blume) Milde var. *major* (Bedd.) Holttum, **H45** 560; terrestrial; montane forest; Gg Bubu, Pk; Fraser's Hill, Ph.

34.5.24b **Diplazium speciosum** Blume var. **speciosum**, **P19** 306; *Athyrium speciosum* (Blume) Milde, **H45** 559; semi-shade of mountain tops; Gg Tahan, Gg Ulu Kali, Ph.

34.5.25 **Diplazium subintegrum** Holttum, **P19** 302; *Athyrium subintegrum* (Holttum) Holttum, **H45** 557; shady montane forest at 1000–1500 m; Main Range and Taiping Hills.

34.5.26 **Diplazium subserratum** (Blume) T. Moore, **P19** 292; *Athyrium subserratum* (Blume) Milde, **H45** 546; near shady streams in hills; about 700 m.

34.5.27 **Diplazium tomentosum** Blume, **P19** 295; *Athyrium tomentosum* (Blume) T. Moore, **H45** 551; lowland and hill forest to 800 m.

34.5.28 **Diplazium velutinum** Holttum, **P19** 312; *Athyrium velutinum* (Holttum) Holttum, **H45** 567; in montane forest at about 1500 m; a few valleys in Cameron Highlands, Ph; endemic.

34.5.29 **Diplazium xiphophyllum** (Baker) C.Chr., **P19** 299; *Athyrium xiphophyllum* (Baker) Copel., **H45** 553; lowland and hill forest to 1000 m.

34.5.30 **Diplazium sp., P19** 298; dry shady forest slopes; Main Range; endemic.

35. ARAUCARIACEAE

35.1.1 **Agathis borneensis** Warb., **FMi10** 433; *Agathis loranthifolia* Salisb., **FMP5** 278; *Agathis dammara* (Lambert) L.G. Richard, **TFM1** 41; tree to 50 m tall; lowland to lower montane forest; north of Peninsula.

35.1.2 **Agathis flavescens** Ridl., **FMP5** 278, **TFM1** 43, **FMi10** 438; tree to 12 m tall; upper montane forest; Gg Tahan, Ph; endemic.

36. CYCADACEAE

36.1.1 **Cycas rumphii** Miq., **FMP5** 284; cycad to 6 m tall; mostly rocky shores; widespread.

36.1.2 **Cycas siamensis** Miq., **FMP5** 285, **C13** 218; cycad to 5 m tall; on limestone; north of Malaya.

37. GNETACEAE

37.1.1 **Gnetum cuspidatum** Blume, **FMi4** 343; *Gnetum longispica* Ridl., **FMP5** 275; *Gnetum penangense* Ridl., **FMP5** 276; liana; lowland and hill forest; widespread.

37.1.2 **Gnetum globosum** Markgr., **M12** 108; scandent shrub; lowland forest; only known from type, Taman Negara, Ph; endemic.

37.1.3a **Gnetum gnemon** L. var. **brunonianum** (Griff.) Markgr., **FMi4** 340; *Gnetum brunonianum* Griff., **FMP5** 274; shrub to 3 m tall; lowland to montane forest at 1500 m; widespread.

37.1.3b **Gnetum gnemon** L. var. **gnemon**, **FMP5** 273, **FMi4** 340, **TFM1** 54; tree to 20 m tall; rocky coasts and islands, widely cultivated; mostly East Coast.

37.1.3c **Gnetum gnemon** L. var. **griffithii** (Parl.) Markgr., **FMi4** 340; shrub; lowland to montane forest; widespread.

37.1.3d **Gnetum gnemon** L. var. **tenerum** Markgr., **FMi4** 341; shrub to 3 m tall; lowland and hill forest; Ph southward.

37.1.4 **Gnetum gnemonoides** Brongn., **FMi4** 344; *Gnetum wrayi* Gamble, **FMP5** 276; liana; lowland forest; widespread.

37.1.5a **Gnetum latifolium** Blume var. **funiculare** (Blume) Markgr., **FMi4** 343; *Gnetum kingianum* Gamble, **FMP5** 276; large liana; lowland forest; widespread.

37.1.5b **Gnetum latifolium** Blume var. **latifolium**, **FMP5** 276, **FMi4** 342; large liana; hill forest; Pk, Ph.

37.1.6 **Gnetum macrostachyum** Hook.*f.*, **FMP5** 274, **FMi4** 346; liana; lowland forest; widespread.

37.1.7 **Gnetum microcarpum** Blume, **FMi4** 346; *Gnetum campestre* (Ridl.) Gamble *ex* Ridl., **FMP5** 275; *Gnetum sylvestre* (Ridl.) Gamble *ex* Ridl., **FMP5** 275; slender liana; lowland and hill forest; widespread.

37.1.8 **Gnetum ridleyi** Gamble *ex* Markgr., **FMi4** 344; large liana; Telom, Ph; endemic.

37.1.9 **Gnetum tenuifolium** Foxw., **FMP5** 277, **FMi4** 342; slender liana; lowland forest; widespread.

38. PODOCARPACEAE

38.1.1 **Dacrycarpus imbricatus** (Blume) de Laub. var. **patulus** de Laub., **FMi10** 379; *Podocarpus imbricatus* Blume, **FMP5** 283, **TFM1** 51; tree 5 m–40 m tall; montane forest above 750 m; Kd, Pk, Ph, Sl.

38.2.1 **Dacrydium beccarii** Parl., **FMP5** 280, **TFM1** 46, **FMi10** 366; shrub or tree to 20 m tall; montane forest, lower altitudes on poor soils; Kd, Kl, Pk, Ph, Sl, Ml, Jh.

38.2.2 **Dacrydium comosum** Corner, **TFM1** 46, **FMi10** 370; shrub or small tree to 12 m tall; upper montane forest at 1440–2200 m; Ph, Sl; endemic.

38.2.3 **Dacrydium elatum** (Roxb.) Wall. *ex* Hook., **FMP5** 279, **TFM1** 46, **FMi10** 363; *Dacrydium beccarii* Parl. var. *subelatum* Corner, **TFM1** 46; tree to 40 m tall; montane forests at 500–1500 m; Kd, Pn, Kl, Pk, Ph, Sl, Ml.

38.2.4 **Dacrydium medium** de Laub., **FMi10** 368; shrub or gnarled tree to 20 m tall; montane forest at 960–2100 m; Kd, Kl, Pk, Ph.

38.3.1 **Falcatifolium falciforme** (Parl.) de Laub., **FMi10** 372; *Dacrydium falciforme* (Parl.) Pilg., **FMP5** 280, **TFM1** 46; shrub or large tree to 36 m tall; montane forest; Tg, Ph.

38.4.1 **Nageia motleyi** (Parl.) de Laub., **FMi10** 393; *Podocarpus motleyi* (Parl.) Dummer, **TFM1** 51; tree to 40 m tall; swampy lowland forest; Pk, Ph, Sl, Jh.

38.4.2 **Nageia wallichiana** (Presl) Kuntze, **FMi10** 391; *Podocarpus blumei* Endl., **FMP5** 281; *Podocarpus wallichianus* Presl, **TFM1** 53; tree to 40 m tall; hill and montane forest; Kd, Kl, Pk, Ph, Sl, Jh.

38.5.1 **Podocarpus deflexus** Ridl., **FMP5** 283, **TFM1** 48, **FMi10** 403; shrub or small tree to 10 m tall; upper montane forest; Gg Tahan, Ph.

38.5.2 **Podocarpus neriifolius** D. Don, **FMP5** 281, **TFM1** 51, **FMi10** 400; tree to 40 m tall; hill and montane forest; Kd, Pn, Pk, Ph, Sl, Ml, Jh.

38.5.3 **Podocarpus polystachyus** R.Br. *ex* Endl., **FMP5** 282, **TFM1** 53, **FMi10** 417; shrub or tree to 20 m tall, coastal vegetation, sometimes inland; Pk, Ph, Sl, Jh, Sp.

38.5.4 **Podocarpus ridleyi** (Wasscher) N.E. Gray, **FMi10** 419; *Podocarpus neriifolius* D. Don var. *ridleyi* Wasscher, **TFM1** 51; tree 4–24 m tall; isolated mountain peaks; scattered; endemic.

38.5.5 **Podocarpus rumphii** Blume, **FMi10** 415; tree to 40 m tall; montane forest; Genting Highlands, Ph/Sl.

38.5.6 **Podocarpus teysmanii** Miq., **FMı10** 406; tree to 12 m tall; lowland forest; scattered.

39. ACANTHACEAE

39.1.1 **Acanthus ebracteatus** Vahl, **FMP2** 577; spreading shrub to 3 m tall; mangroves, tidal mud; widespread.

39.1.2 **Acanthus ilicifolius** L., **FMP2** 577; spreading shrub to 1.5 m tall; mangroves; commoner in the north.

39.1.3 **Acanthus volubilis** Wall., **FMP2** 577; trailing shrub; tidal mud; scattered.

39.2.1 **Andrographis paniculata** (Burm.*f.*) Wall. *ex* Nees, **FMP2** 582; herb to 1 m tall; waste ground; widespread, possibly only native in the far north.

39.2.2 **Andrographis laxiflora** (Blume) Lindau, **H05** 353; *Andrographis tenuiflora* T. Anderson, **FMP2** 582, **C13** 70; herb to 60 cm tall; on limestone; P. Langkawi, Kd.

39.3.1 **Asystasia gangetica** (L.) T. Anderson, **B31** 78; *Asystasia coromandeliana* Nees, **FMP2** 586; creeping or climbing herb; waste areas, sometimes cultivated; naturalized from India.

39.3.2 **Asystasia nemorum** Nees, **K09** 187; *Asystasia intrusa* Blume, **FMP2** 585; scrambling herb to 2 m tall; waste ground, roadsides; throughout.

39.4.1 **Barleria conspicua** Nees, **FMP2** 588; tall herb; once from Pn, endemic.

39.4.2 **Barleria prionitis** L., **FMP2** 587; prickly shrub to 75 cm tall; dry spots; Ps, Ml.

39.4.3 **Barleria siamensis** Craib var. **glabrescens** Ridl., **FMP2** 588, **C14** 71; herb to 30 cm tall; on limestone; P. Dayang Bunting (Langkawi); endemic variety.

39.5.1 **Chroesthes longifolia** (Wight) B. Hansen, **H04** 210; *Lepidagathis longifolia* Wight, **FMP2** 587; shrub to 2.5 m; lowland forest; widespread.

39.6.1 **Cosmianthemum knoxiifolium** (C.B. Clarke) B. Hansen, **H06** 195; *Gymnostachyum knoxiifolium* C.B. Clarke, **FMP2** 581; *Ptyssiglottis parviflora* (Ridl.) Ridl., **FMP2** 604; *Sphinctacanthus malayanus* Ridl., **FMP2** 607; shrub about 60 cm tall; hill forest; Sl, NS.

39.7.1 **Dicliptera rosea** Ridl., **FMP2** 608, **C14** 71; subshrub to 30 cm tall; on limestone; north of Malaya; endemic.

39.8.1 **Filetia bracteosa** C.B. Clarke, **FMP2** 584; shrub to 1 m tall; open spots in montane forest; Pk, Ph; endemic.

39.8.2 **Filetia glabra** Ridl., **FMP2** 584; shrub; montane forest; Gg Mengkuang Lebah, Sl; endemic.

39.8.3 **Filetia hirta** Ridl., **FMP2** 585; herb to 30 cm tall, rootstock slightly woody; clearings in the mountains; Ph, Sl; endemic.

39.8.4 **Filetia paniculata** C.B. Clarke, **FMP2** 584; shrub about 30 cm tall; Pk.

39.8.5 **Filetia ridleyi** C.B. Clarke, **FMP2** 585; herb; clearings in the mountains; Pk, Ph, Sl; endemic.

39.8.6 **Filetia scortechinii** C.B. Clarke, **FMP2** 584; spreading shrub; montane forest; Pk, Sl; endemic.

39.9.1 **Gymnostachyum ceylanicum** Arn. & Nees, **FMP2** 580; herb; P. Langkawi.

39.9.2a **Gymnostachyum decurrens** Stapf var. **decurrens**, **FMP2** 579, **C14** 71; short-stemmed herb; shady places, including limestone; scattered; endemic.

39.9.2b **Gymnostachyum decurrens** Stapf var. **robinsonii** (Ridl.) J.B. Imlay, **I02** 127; *Gymnostachyum robinsonii* Ridl., **FMP2** 579, **C14** 71; creeping herb ascending to 8 cm; on limestone; once from P. Datang Bunting (Langkawi); endemic.

39.9.3 **Gymnostachyum diversifolium** C.B. Clarke, **FMP2** 579, **C14** 71; creeping herb ascending to 15 cm tall; forests, sometimes on limestone; P. Langkawi, Kl, Pk; endemic.

39.9.4 **Gymnostachyum hirtistylum** C.B. Clarke, **FMP2** 580; herb to 30 cm tall; once from Pk.

39.9.5 **Gymnostachyum hirtum** Ridl., **R14** 474; short-stemmed herb to 30 cm tall; near Kuala Kangsar, Pk; endemic.

39.9.6 **Gymnostachyum insulare** Ridl., **FMP2** 582; herb to 60 cm tall; P. Langkawi; endemic.

39.9.7 **Gymnostachyum magis-nervatum** C.B. Clarke, **FMP2** 580; herb to 60 cm tall; wet places; Larut, Pk; endemic.

39.9.8 **Gymnostachyum magnum** C.B. Clarke, **FMP2** 581; shrub; lowland forest; Pk, NS; endemic.

39.9.9 **Gymnostachyum pallens** C.B. Clarke, **FMP2** 580; creeping shrub; Pk; endemic.

39.9.10 **Gymnostachyum ridleyi** C.B. Clarke, **FMP2** 581; large shrub; lowland forest; Pk, Sl; endemic.

39.9.11 **Gymnostachyum scortechinii** C.B. Clarke, **FMP2** 581; herb to 45 cm tall; Pk; endemic.

39.9.12 **Gymnostachyum simplicicaule** C.B. Clarke, **FMP2** 580; herb about 20 cm tall; Sg Raya, Pk; endemic.

39.10.1a **Hemigraphis brunelloides** (Lam.) Bremek. var. **brunelloides**, **B26** 90; *Hemigraphis confinis* T. Anderson var. *hirsuta* Ridl., **FMP2** 570; herb.

39.10.1b **Hemigraphis brunelloides** (Lam.) Bremek. var. **vahliana** Bremek., **B26** 91; herb; Ml.

39.10.2 **Hemigraphis confinis** T. Anderson, **FMP2** 569; herb to 60 cm tall; roadsides; NS, Ml.

39.10.3 **Hemigraphis hispidula** Craib, **FMP2** 569 '*hispida*', **B26** 100; prostrate creeping herb; Kuala Aring, Kl.

39.10.4 **Hemigraphis platycarpos** C.B. Clarke, **FMP2** 570; herb to 30 cm tall; open grassy places; widespread.

39.10.5 **Hemigraphis primulifolia** (Nees) Fern.-Vill., **B26** 117, **T05** 128; herb to 10 cm tall; weed of damp shady places; Sp; naturalized from the Philippines.

39.10.6 **Hemigraphis ridleyi** C.B. Clarke, **FMP2** 569; creeping herb; open places; mostly in the north.

39.10.7a **Hemigraphis sumatrensis** (Heyne *ex* Roth) Boerl. *ex* Bremek. var. **rothiana** Bremek., **B26** 97; *Hemigraphis alternata auct. non* (Burm.*f.*) T. Anderson, **FMP2** 570 in part; slender herb to 30 cm tall, open places; widespread.

39.10.7b **Hemigraphis sumatrensis** (Heyne *ex* Roth) Boerl. *ex* Bremek. var. **sumatrensis**, **B26** 97; *Hemigraphis alternata auct. non* (Burm.*f.*) T. Anderson, **FMP2** 570 in part; slender herb to 30 cm tall; open places; widespread.

39.11.1 **Hygrophila meianthos** C.B. Clarke, **FMP2** 566; herb to 30 cm tall; wet grassy places; Ml, Sp.

39.11.2a **Hygrophila phlomoides** Nees var. **angusta** Ridl., **FMP2** 567; herb; wet lowland forest; Kl; endemic variety.

39.11.2b **Hygrophila phlomoides** Nees var. **phlomoides**, **FMP2** 567; herb to 1 m tall; common in wet places; widespread.

39.11.2c **Hygrophila phlomoides** Nees var. **roxburghii** C.B. Clarke, **FMP2** 567; small, often procumbent, herb; Pn.

39.11.3 **Hygrophila polysperma** (Nees) T. Anderson, **FMP2** 565; small procumbent herb to 20 cm tall; Ml.

39.11.4 **Hygrophila pusilla** Blume, **B03** 570; *Hygrophila saxatilis* Ridl., **FMP2** 566; tufted herb 8–15 cm tall; on rocks in rivers; Kl, Ph, Jh.

39.11.5 **Hygrophila ringens** (L.) R.Br. *ex* Steud., **N11** 39; *Hygrophila angustifolia* R.Br., **FMP2** 566; *Hygrophila quadrivalvis* Buch.-Ham., **FMP2** 566; *Hygrophila erecta* (Burm.*f.*) Hochr., **B31** 66, **K09** 189; herb to 1 m tall; damp waste ground; widespread.

39.11.6 **Hygrophila schulli** (Buch.-Ham.) M.R. Almeida & S.M. Almeida, **N11** 40; *Hygrophila spinosa* T. Anderson, **FMP2** 567; spiny herb to 1.5 m tall; waste ground; Sp; naturalized from India.

39.11.7 **Hygrophila stricta** (Vahl) Lindau; *Nomaphila stricta* (Vahl) Nees; **FMP2** 568 incl. vars. *minor* (C.B. Clarke) Ridl. and *corymbosa* (Blume) Ridl.; herb to 1 m tall; seasonally wet places, ricefields; widespread.

39.11.8 **Hygrophila subsessilis** C.B. Clarke, **FMP2** 567; herb to 30 cm tall; Ml; endemic.

39.12.1 **Hypoestes malaccensis** Wight, **FMP2** 610; herb to 30 cm tall; waste ground; Ml.

39.13.1 **Justicia alternifolia** C.B. Clarke, **FMP2** 601; shrub to 1 m tall; Ulu Slim, Pk; endemic.

39.13.2 **Justicia gendarussa** Burm.*f.*, **G15** 589; *Gendarussa vulgaris* Nees, **FMP2** 593; shrub to 1.5 m; around villages, established as escape from cultivation.

39.13.3 **Justicia henicophylla** C.B. Clarke, **FMP2** 601 incl. vars. *caudata* C.B. Clarke & *scandens* C.B. Clarke, **C14** 72; herb to 1 m tall; often on limestone; Pk, Ph; endemic.

39.13.4 **Justicia inconspicua** Ridl., **FMP2** 602; tall straggling herb; East coast and islands; endemic.

39.13.5 **Justicia lancifolia** Ridl. *ex* S. Moore, **FMP2** 600; herb to 25 cm tall; lowland forest; Sl; endemic.

39.13.6 **Justicia maingayi** C.B. Clarke, **FMP2** 600; herb to 60 cm tall; Penang Hill; endemic.

39.13.7 **Justicia ochroleuca** Blume, **H11** 210; *Justicia patulinervis* C.B. Clarke, **FMP2** 595; *Justicia laetevirens* (*non* Vahl) Ridl., **FMP2** 596; herb to 60 cm tall; lowland forest; ?Pk, Ph.

39.13.8 **Justicia otophora** C.B. Clarke, **FMP2** 601; scandent herb; river sides; Pk, endemic.

39.13.9 **Justicia ovalis** Ridl., **FMP2** 600; herb to 45 cm tall; P. Tioman, endemic.

39.13.10 **Justicia procumbens** L., **G15** 597; *Rostellularia procumbens* (L.) Nees, **FMP2** 602; small herb; open sandy spots; Pn, NS.

39.13.11 **Justicia ptychostoma** Nees, **FMP2** 594 incl. vars. *angustifolia* C.B. Clarke, *auriculata* C.B. Clarke, *parvibracteata* C.B. Clarke & *rotundifolia* C.B. Clarke; herb to 30 cm tall; open dry places including limestone; north of Malaya; endemic.

39.13.12 **Justicia pubiflora** C.B. Clarke, **FMP2** 596; herb to 1 m tall; lowland and hill forest; Pk, Jh; endemic.

39.13.13 **Justicia quadrifaria** (Nees) T. Anderson, **G15** 593; *Calophanoides quadrifaria* (Nees) Ridl., **FMP2** 593; herb to 60 cm; common in rocky or sandy areas; widespread.

39.13.14 **Justicia remotifolia** Ridl., **FMP2** 600; slender; straggling herb to 60 cm tall; Temerloh, Ph; endemic.

39.13.15 **Justicia robinsonii** Ridl., **FMP2** 597, **C14** 73; shrubby herb; on limestone; P. Dayang Bunting (Langkawi); endemic.

39.13.16 **Justicia rupestris** Ridl., **FMP2** 595, **C14** 73; herb to 50 cm tall; on limestone; once from Bt Lagi, Ps; endemic.

39.13.17 **Justicia scortechinii** C.B. Clarke, **FMP2** 595; herb; hill forest; Maxwell's Hill, Pk; endemic.

39.13.18 **Justicia subalternans** C.B. Clarke, **FMP2** 601, **C14** 73; shrub to 1.5 m tall; on limestone; once from Kinta, Pk; endemic.

39.13.19 **Justicia subcymosa** C.B. Clarke, **FMP2** 596; herb to 1 m tall; forest, also on limestone; mostly in the north; endemic.

39.13.20 **Justicia sumatrana** C.B. Clarke, **FMP2** 600; bushy herb; montane forest; Kl, Pk.

39.13.21 **Justicia uber** C.B. Clarke, **FMP2** 599; shrub to 1.5 m tall; lowland forest, occasionally on limestone; widespread; endemic.

39.13.22 **Justicia valida** Ridl., **FMP2** 599, **C14** 73; shrublet to 60 cm tall; on limestone; Gg Keriang, Kd.

39.13.23 **Justicia vasculosa** Wall., **FMP2** 598; weak straggling herb to 30 cm tall; lowland forest; widespread.

39.13.24 **Justicia sp., H12** 54; *Ptyssiglottis rubrolutea* (Ridl.) Ridl., **FMP2** 605; slender creeping herb; lowland forest; Kl; endemic.

39.14.1 **Lepidagathis incurva** Buch.-Ham. *ex* D. Don, **FMP2** 586; creeping wiry herb ascending to 1 m; open places, waste ground; common in the north.

39.14.2 **Lepidagathis macrantha** C.B. Clarke, **FMP2** 587; herb; Pk.

39.14.3 **Lepidagathis yappii** Ridl., **FMP2** 586; herb to 30 cm tall; montane forest; Gg Inas, Pk; endemic.

39.15.1 **Nelsonia canescens** (Lam.) Spreng., **B29** 248; *Nelsonia campestris* R.Br., **FMP2** 558; creeping herb; open heathy country; Ps, Kd, Pn, Ph.

39.16.1 **Pararuellia sumatrensis** (C.B. Clarke) Bremek. var. **ridleyi** (C.B. Clarke) Bremek., **B32** 28; *Aporuellia sumatrensis* C.B. Clarke var. *ridleyi* C.B. Clarke, **FMP2** 564, **C14** 71; herb to 30 cm tall; on limestone; Gua Batu, Sl; endemic variety.

39.17.1a **Peristrophe acuminata** Nees var. **acuminata**, **FMP2** 609; herb to 1 m tall; waste ground; widespread.

39.17.1b **Peristrophe acuminata** Nees var. **salicifolia** (Miq.) Ridl., **FMP2** 609; herb to 1 m tall; waste ground; Pn, Pk.

39.17.2 **Peristrophe roxburghiana** (Schult.) Bremek., **K09** 189; *Peristrophe baphica* (Spreng.) Bremek., **B31** 80; *Peristrophe tinctoria* Nees, **FMP2** 609; herb to 1 m tall; shady waste ground; scattered along West Coast.

39.18.1 **Phialacanthus major** C.B. Clarke, **FMP2** 583; shrub to 2 m tall; montane forest; Gg Batu Puteh, Pk; endemic.

39.18.2 **Phialacanthus minor** C.B. Clarke, **FMP2** 583; shrub; montane forest; Pk; endemic.

39.18.3 **Phialacanthus pauper** (C.B. Clarke) Bremek., **B29** 256; *Staurogyne pauper* C.B. Clarke, **FMP2** 561; herb to 1 m tall; lowland forest; Larut, Pk; endemic.

39.18.4 **Phialacanthus wrayi** C.B. Clarke, **FMP2** 583; shrub to 1 m tall; montane forest; Gg Batu Puteh, Pk; endemic.

39.19.1 **Phlogacanthus brevis** C.B. Clarke, **FMP2** 578, **H12** 54; *Ptyssiglottis flava* (Ridl.) Ridl., **FMP2** 605; herb to about 1 m; swamp forest; Pk; endemic.

39.20.1 **Pseuderanthemum breviflos** (C.B. Clarke) Ridl., **FMP2** 590; subshrub to 20 cm tall; Gopeng, Pk; endemic.

39.20.2 **Pseuderanthemum candidum** (Ridl.) Ridl., **FMP2** 590; herb to 60 cm tall; by forest streams; Ulu Gombak, Sl; endemic.

39.20.3 **Pseuderanthemum caudifolium** (C.B. Clarke) Ridl., **FMP2** 590; shrub to 2 m tall; lowland forest; Pk; endemic.

39.20.4 **Pseuderanthemum crenulatum** (Lindl.) Radlk., **FMP2** 589; subshrub to 50 cm tall; lowland forest, also on limestone; widespread.

39.20.5 **Pseuderanthemum graciliflorum** (Nees) Ridl., **FMP2** 591, **H11** 213; shrub to 2 m; common in lowland forests; widespread.

39.20.6 **Pseuderanthemum hirtipistillum** Ridl., **FMP2** 589; subshrub to 60 cm tall; Tapah, Pk; endemic.

39.20.7 **Pseuderanthemum kingii** (C.B. Clarke) Ridl., **FMP2** 591; slender herb to 30 cm tall; damp lowland forest; Jh, Sp; endemic.

39.20.8 **Pseuderanthemum latifolium** (Vahl) B. Hansen, **H11** 213; herb.

39.20.9 **Pseuderanthemum lilacinum** Stapf, **FMP2** 591; dubious species described from plant grown at Kew collected from Batu Caves, Sl.

39.20.10 **Pseuderanthemum selangorense** (C.B. Clarke) Ridl., **FMP2** 590; shrub; lowlands; Sl; endemic.

39.20.11 **Pseuderanthemum sylvestre** Ridl., **FMP2** 591; shrub; lowland forest; Sg Buloh, Sl; endemic.

39.20.12 **Pseuderanthemum teijsmannii** (T. Anderson) Ridl., **FMP2** 592; sprawling bush; lowland forest; scattered; endemic.

39.21.1 **Ptyssiglottis cuprea** (Ridl.) B. Hansen, **H12** 40; *Polytrema cuprea* Ridl., **FMP2** 607, **C14** 74; prostrate herb to 10 cm tall; on limestone; only known from near Ipoh, Pk; endemic.

39.21.2 **Ptyssiglottis isophylla** (C.B. Clarke) B. Hansen, **H12** 45; *Polytrema isophyllum* C.B. Clarke, **FMP2** 606; herb to 70 cm tall; Pk, Ph, Sl.

39.21.3 **Ptyssiglottis kunthiana** (Nees) B. Hansen, **H12** 42; *Polytrema vulgare* C.B. Clarke, **FMP2** 606; *Polytrema crenulatum* C.B. Clarke, **FMP2** 606; *Polytrema aequale* Ridl., **FMP2** 607 incl. var. *minor* Ridl.; herb to 40 cm; lowland forest to 200 m, often on limestone; widespread.

39.21.4 **Ptyssiglottis subcordata** (C.B. Clarke) S. Moore, **FMP2** 604, **H12** 32; *Polytrema repens* Ridl., **FMP2** 607; *Isoglossa subcordata* (C.B. Clarke) B. Hansen, **H05** 8; herb to 50 cm; hill forests; Pk; endemic.

39.21.5 **Ptyssiglottis chrysea** (Ridl.) Ridl., **FMP2** 605; creeping herb ascending to 15 cm; montane forest; Ulu Gombak, Sl; endemic.
[**H12** excludes from *Ptyssiglottis*]

39.21.6 **Ptyssiglottis densiflora** (C.B. Clarke) Ridl., **FMP2** 604; decumbent subshrub to 20 cm tall; montane forest; Gg Tungol, Pk; endemic.
[**H12** excludes from *Ptyssiglottis*]

39.21.7 **Ptyssiglottis radicans** (C.B. Clarke) S. Moore, **FMP2** 605; creeping herb; lowland forest; Ulu Selama, Pk; endemic.
[**H12** excludes from *Ptyssiglottis*]

39.22.1 **Rhinacanthus nasutus** (L.) Kurz, **B03** 585; *Rhinacanthus communis* Nees, **FMP2** 603; shrub to 2 m tall; open places; chiefly in the north.

39.23.1 **Ruellia prostrata** Poir., **FMP2** 564; *Dipteracanthus prostratus* (Poir.) Nees, **B30** 16; creeping herb; sea shore; P. Song Song, Kd.

39.23.2 **Ruellia repens** L., **FMP2** 564; *Dipteracanthus repens* (L.) Hassk., **B32** 18; creeping herb; grassy places; common and widespread.

39.23.3 **Ruellia malasica** (C.B. Clarke) J.B. Imlay, **I02** 112; *Aporuellia axillaris* C.B. Clarke, **FMP2** 565; *Acanthopale malasica* C.B. Clarke, **FMP2** 576; *Dipteracanthus ventricosus* Nees, **B32** 20; herb of limestone.

39.23.4 **Ruellia tuberosa** L., **M31** 132, **B03** 557; herb; commoner in the north; naturalized from the West Indies.

39.24.1 **Rungia laxiflora** C.B. Clarke, **H10** 206; *Justicia bracteata* Ridl., **FMP2** 597; *Justicia breviflos* Ridl., **FMP2** 597; *Justicia clarkeana* Ridl., **FMP2** 599; *Justicia microcarpa* Ridl., **FMP2** 599; *Justicia pectinella* Ridl., **FMP2** 598; *Justicia secundiflora* Ridl., **FMP2** 598; herb to 1 m tall; lowlands and mountains; widespread.

39.24.2 **Rungia minutiflora** C.B. Clarke, **FMP2** 602, **C14** 74; slender herb to 25 cm tall; on limestone; twice from P. Langkawi; endemic.

39.24.3 **Rungia pectinata** (L.) Nees, **FMP2** 603; herb to 15 cm tall; open sandy places; Kangar, Ps; endemic.

39.24.4 **Rungia selangorensis** (C.B. Clarke) B. Hansen, **H11** 213, **H10** 213; *Justicia selangorensis* C.B. Clarke, **FMP2** 596; robust herb; lowland forest; P. Langkawi, Sl; endemic.

39.24.5 **Rungia vegeta** (Ridl.) B. Hansen, **H11** 213, **H10** 213; *Justicia vegeta* Ridl., **FMP2** 596; large herb; montane forest; G. Mengkuang Lebah, Sl; endemic.

39.25.1 **Staurogyne arcuata** C.B. Clarke, **FMP2** 561, **B29** 184; small herb to 20 cm tall; montane forest; Pk, Ph.

39.25.2 **Staurogyne condensata** (Ridl.) Bremek., **B29** 206; *Staurogyne longifolia* (Nees) Kuntze var. *condensata* Ridl., **FMP2** 560; only known from type; Kuala Lebir, Kl; endemic.

39.25.3 **Staurogyne cremostachya** Bremek., **B29** 202; *Staurogyne comosa* (Wall.) Kuntze *nom. illeg.*, **FMP2** 560; herb to 40 cm tall; hill forest; Tg, Pn, Pk, Ph, Sl.

39.25.4 **Staurogyne griffithiana** (Nees) Kuntze, **FMP2** 561, **B29** 181; small herb to 20 cm tall; lowland forests; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

39.25.5a **Staurogyne kingiana** C.B. Clarke var. **kingiana**, **FMP2** 560, **B29** 193; herb to 70 cm tall, lowland and hill forest; Kl, Tg, Pk, Ph, Jh, Sp.

39.25.5b **Staurogyne kingiana** C.B. Clarke var. **magnifolia** Bremek., **B29** 193; herb to 70 cm tall; Kl; endemic variety.

39.25.6 **Staurogyne lanceolata** (Blume) Kuntze var. **scabridula** Bremek., **B29** 208; herb to 30 cm tall; Ps, Kd; endemic variety.

39.25.7 **Staurogyne lasiobotrys** (Nees) Kuntze, **FMP2** 561, **B29** 195; herb to 60 cm tall; lowland and hill forest; Kd, Kl, Pn, Pk, Ph, NS.

39.25.8 **Staurogyne longifolia** (Nees) Kuntze, **FMP2** 560, **B29** 200; *Staurogyne lanceolata auct. non* (Blume) Kuntze, **FMP2** 559; *Staurogyne angustifolia auct. non* Wall., **FMP2** 560; herb to 50 cm tall; lowland forest to 300 m; Pk, Ph, Sl, NS, Ml, Jh.

39.25.9 **Staurogyne longispica** (Ridl.) Ridl., **FMP2** 563, **B29** 222; herb to 60 cm tall; montane forest; Sl, NS.

39.25.10a **Staurogyne malaccensis** C.B. Clarke var. **malaccensis**, **B29** 205; *Staurogyne malaccensis* C.B. Clarke, **FMP2** 559 in part; forest herb to 20 cm tall; Ml.

39.25.10b **Staurogyne malaccensis** C.B. Clarke var. **stenophylla**, **B29** 205; *Staurogyne malaccensis* C.B. Clarke, **FMP2** 559 in part; forest herb to 20 cm tall; Kd, Kl, Pn.

39.25.11 **Staurogyne merguensis** (T. Anderson) Kuntze, **FMP2** 562, **B29** 226; herb to 25 cm tall; lowland forest; Kd, Kl, Pk, Ph.

39.25.12 **Staurogyne racemosa** (Roxb.) Kuntze, **FMP2** 562, **B29** 232; herb to 45 cm tall; hill forest at 600–750 m; Penang Hill; endemic.

39.25.13 **Staurogyne scopulicola** Kiew, **K35** 245; prostrate herb; shaded sandstone cliff; Gg Keriong, Ph; endemic.

39.25.14a **Staurogyne setigera** (Nees) Kuntze var. **grandis** Bremek., **B29** 189; *Staurogyne setigera* (Nees) Kuntze, **FMP2** 559 in part; forest herb to 30 cm tall; Ph, Jh.

39.25.14b **Staurogyne setigera** (Nees) Kuntze var. **setigera**, **B29** 188; *Staurogyne setigera* (Nees) Kuntze, **FMP2** 559 in part; forest herb to 20 cm tall; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

39.25.15 **Staurogyne subglabra** C.B. Clarke, **FMP2** 562, **B29** 199; herb to 60 cm tall; usually montane forest at 1000–1500 m, Pk, Ph, Sl.

39.25.16 **Staurogyne viscida** (Ridl.) Bremek., **B29** 169; *Limnophila viscida* Ridl., **FMP2** 478; small herb to 15 cm tall, rice fields; Ps; endemic.

39.26.1 **Stenothyrsus ridleyi** C.B. Clarke, **FMP2** 568, **C14** 74; tall herb; on limestone; near Ipoh, Pk; endemic.

39.27.1 **Strobilanthes albostriata** Ridl., **FMP2** 574; herb to 30 cm tall; montane forest; Pk, Ph; endemic.

39.27.2 **Strobilanthes bibracteata** Blume, **FMP2** 572; herb to 1.5 m tall; montane forest; Pk.

39.27.3 **Strobilanthes collina** Nees, **FMP2** 575; herb to 1 m tall; montane forest; Pk northward.

39.27.4 **Strobilanthes hirtisepala** C.B. Clarke, **FMP2** 572; herb to 1.5 m tall; montane forest; Kd, Pk, Ph, Sl; endemic.

39.27.5 **Strobilanthes latebrosa** Ridl., **FMP2** 573; shrub to 2 m tall; lowland forest; Bt Tangga, NS; endemic.

39.27.6 **Strobilanthes leucopogon** Ridl., **FMP2** 575; large herb; P. Langkawi; endemic.

39.27.7 **Strobilanthes maingayi** C.B. Clarke, **FMP2** 571; shrubby herb to 1 m tall; mostly in hill forest; Pn, Pk, Ph, Sl, Sp.

39.27.8 **Strobilanthes pachyphylla** C.B. Clarke, **FMP2** 575; shrub to 1 m tall; limestone; once from Gg Mesah, Pk; endemic.

39.27.9 **Strobilanthes palawanensis** Elmer, **T10** 120; *Endopogon ridleyi* C.B. Clarke, **FMP2** 570; herb to 30 cm tall; lowland forest; Sp.

39.27.10 **Strobilanthes pateriformis** Lindau, **T09** 34; *Strobilanthes phoenicea* Ridl., **FMP2** 575; herb to 60 cm tall; lowland and hill forest to 1600 m, often near streams; Pk.

39.27.11 **Strobilanthes pedicellata** Ridl., **FMP2** 576; herb; montane forest; Ph; endemic.

39.27.12 **Strobilanthes peninsularis** Terao, **T10** 123; shrub to 90 cm; P. Langkawi.

39.27.13 **Strobilanthes ruficapillis** Ridl., **FMP5** 326; creeping herb ascending to 50 cm; Raub, Ph; endemic.

39.27.14 **Strobilanthes ruficaulis** Ridl., **FMP2** 573; herb to 30 cm tall; montane forest; Gg Berembun, Ph; endemic.

39.27.15 **Strobilanthes rufocapitata** C.B. Clarke, **FMP2** 574; shrubby creeper; on rocks in the mountains; Pk; endemic.

39.27.16 **Strobilanthes rufopauper** C.B. Clarke, **FMP2** 573; herb; montane forest; Pk, Ph; endemic.

39.27.17 **Strobilanthes rufosepala** C.B. Clarke, **FMP2** 573; decumbent herb to 50 cm tall; hill forest; Pn, Pk; endemic.

39.27.18 **Strobilanthes rufostrobilata** C.B. Clarke, **FMP2** 573; herb to 30 cm tall; Pk; endemic.

39.27.19 **Strobilanthes scabrida** Ridl., **FMP2** 574; herb to 30 cm tall; montane forest; Ph, Sl; endemic.

39.27.20 **Strobilanthes sylvestris** Ridl., **FMP2** 575; herb to 60 cm tall;lowland forest; Pk; endemic.

39.27.21 **Strobilanthes vulpina** Ridl., **FMP2** 574; herb to 30 cm tall; montane forest; Ph; endemic.

39.28.1a **Thunbergia alata** Boj. *ex* Sims ssp. **alata**, **B30** 42; *Thunbergia alata* Boj. *ex* Sims, **FMP2** 557 in part; herbaceous vine; waste places; naturalized from Africa.

39.28.1b **Thunbergia alata** Boj. *ex* Sims ssp. **reticulata** (Hochst. *ex* Nees) Bremek., **B30** 42; *Thunbergia alata* Boj. *ex* Sims, **FMP2** 557 in part; herbaceous vine; waste places; naturalized from Africa.

39.28.2 **Thunbergia crispula** Bremek., **B30** 53; *Thunbergia fragrans* Roxb. var. *javanica* (Gaertn.) C.B. Clarke, **FMP2** 557 in part; climber; sometimes on limestone; Kl, Pk, Ph, Sl; endemic.

39.28.3 **Thunbergia dasychlamys** Bremek., **B30** 53; climber; only known from Sp; endemic.

39.28.4 **Thunbergia grandiflora** (Roxb. *ex* Rottl.) Roxb., **FMP2** 557, **B30** 45; liana; Sp; naturalized from South Asia.

39.28.5 **Thunbergia hebecocca** Bremek., **B30** 56; *Thunbergia fragrans* Roxb. var. *javanica* (Gaertn.) C.B. Clarke, **FMP2** 557 in part; climber; P. Langkawi, Kl, Pn; endemic.

39.28.6 **Thunbergia laurifolia** Lindl., **FMP2** 556, **B30** 47; stout liana; forests and open country; Kd, Kl, Pg, Pk, Ph, Ml, Sp.

39.28.7 **Thunbergia trachychlamys** Bremek., **B30** 52; climber; Ps, Pk; endemic.

39.29.1 **Thysanostigma odontites** (Ridl.) B. Hansen, **H09** 228; *Justicia odontites* Ridl., **FMP2** 598; *Justicia trichodes* Ridl., **R14** 475; *Justicia johorensis* J. Sinclair, **S25** 18; herb about 60 cm tall; lowland forests; Sl, Jh; endemic.

The following species have also been recorded from the Malay Peninsula: *Clinacanthus nutans* (Burm.*f.*) Lindau (*Clinacanthus burmanni* Nees, **FMP2** 592), *Ecbolium ligustrinum* (Vahl) Vollesen (*Ecbolium linneanum* Kurz, **FMP2** 608) and *Ruellia amoena* Nees [**FMP5** 325] are occasional escapes from gardens, *Peristrophe paniculata* (Forssk.) Brummitt (*Peristrophe bicalyculata* (Retz.) Nees, **FMP2** 610) has not been found south of the Thai border, and *Elytraria acaulis* (L.*f.*) Lindau var. *lyrata* (Nees) Bremek. [**B29** 250] appears to have died out in the Singapore Botanic Gardens where it once occurred as a lawn weed.

40. ACERACEAE

40.1.1 **Acer laurinum** Hassk., **D23** 396; *Acer caesium* (Reinw. *ex* Blume) Kosterm., **TFM2** 1; *Acer niveum* Blume, **FMi4** 3; tree to 30 m tall, usually smaller; lower montane forest, twice recorded from lowland peat swamp; Kl, Ph, Sl, Jh.

41. ACTINIDIACEAE

41.1.1 **Actinidia callosa** Lindl. var. **pubescens** Dunn, **FMi4** 39; rambling shrub, liane to 30 m; montane rain forest; once collected.

41.1.2 **Actinidia latifolia** (Gardner & Champ.) Merr., **FMi4** 39, **TFM4** 1; *Actinidia championi* Benth., **FMP1** 206; trailing shrub or liana to 20 m; hill forest; Pk, Sl, Jh.

41.2.1 **Saurauia fragrans** Hoogland, **TFM4** 3; *Saurauia tristyla* DC., **FMP1** 207 in part; small tree to 12 m tall; lowland and hill forest; Ph, Sl, NS.

41.2.2 **Saurauia leprosa** Korth., **TFM4** 4; *Saurauia cauliflora* var. *calycina* King, FMP1 208; small tree to 12 m tall; lowland forest to 800 m; Pk, Ph, Sl.

41.2.3 **Saurauia mahmudii** Hoogland, **TFM4** 4; small tree to 6 m tall; montane forest above 1500 m, often near streams; known only from Cameron Highlands, Ph; endemic.

41.2.4 **Saurauia malayana** Hoogland, **TFM4** 4; small tree to 12 m tall; disturbed lower montane forest 1100–1500 m; restricted to the Cameron Highlands, Ph; endemic.

41.2.5 **Saurauia nepaulensis** DC., **TFM4** 5; shrub or small tree to 10 m tall; secondary montane forest above 1400 m; Cameron Highlands, Ph; possibly not native but escaped from cultivation.

41.2.6 **Saurauia nudiflora** DC., **FMP1** 207, **TFM4** 5; small tree to 12 m tall; lowland and hill forest; Kd, Pk, Ph, Sl.

41.2.7 **Saurauia pentapetala** (Jack) Hoogland, **TFM4** 5; *Saurauia tristyla* DC., **FMP1** 207 in part; small tree to 15 m tall; lowland and hill forest to 1100 m; common throughout.

41.2.8 **Saurauia roxburghii** Wall., **TFM4** 7; *Saurauia tristyla* DC., **FMP1** 207 in part; shrub or small tree to 12 m tall; mostly in disturbed hill forest, to 1250 m; Kl, Tg, Pk, Ph, Sl.

41.2.9 **Saurauia rubens** Ridl., **FMP1** 208, **TFM4** 7; small tree to 12 m tall; montane forest; Tg, Ph; endemic.

41.2.10 **Saurauia vulcani** Korth., **TFM4** 7; *Saurauia grandis* Ridl., **FMP1** 207; shrub or tree to 20 m tall; secondary montane forest 750–1700 m; Ph.

42. AIZOACEAE

42.1.1 **Sesuvium portulacastrum** (L.) L., **FMP1** 866, **FMi4** 272; creeping succulent herb; on sandy or muddy beaches near the tide line; throughout.

42.2.1 **Trianthema portulacastrum** L., **FMi4** 274; herb to 50 cm tall; weed of cultivation, roadsides; scattered.

43. ALANGIACEAE

43.1.1a **Alangium ebenaceum** (C.B. Clarke) Harms var. **ebenaceum**, **FMP1** 893, **TFM1** 57; tree to 20 m tall; lowland forest; Tg and Pk southward.

43.1.1b **Alangium ebenaceum** (C.B. Clarke) Harms var. **tutela** (Ridl.) Kochummen, **TFM1** 57; *Alangium tutela* Ridl., **FMP1** 894; small tree; lowland forest; Ph, Jh, Sp; endemic variety.

43.1.2 **Alangium griffithii** (C.B. Clarke) Harms, **TFM1** 58; *Alangium uniloculare* (Griff.) King, **FMP1** 894; tree to 25 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Jh.

43.1.3 **Alangium kurzii** Craib, **TFM1** 58; *Alangium begoniifolium auct. non* (Roxb.) Baill., **FMP1** 894; tree to 20 m tall; lowland forest; Kd, Pn, Pk, Sl, NS.

43.1.4 **Alangium nobile** (C.B. Clarke) Harms, **FMP1** 892, **TFM1** 58; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Sl, NS, Ml.

43.1.5 **Alangium ridleyi** King, **FMP1** 893, **TFM1** 59; tree to 30 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml; endemic.

43.1.6 **Alangium rotundifolium** (Hassk.) Bloemb., **TFM1** 60; *Alangium rotundatum* Ridl., **FMP5** 312; tree to 15 m tall; hill and montane forest; Kd, Pk, Ph, Jh.

43.1.7 **Alangium salviifolium** (L.*f.*) Wangerin, **TFM1** 57; *Alangium lamarckii* Thwaites, **FMP1** 892; scandent shrub or small tree; lowland forest; Pk, Sp.

44. AMARANTHACEAE

44.1.1 **Achyranthes aspera** L., **FMP3** 8, **FMi4** 88, **T16** 38; erect herb to 2 m tall; roadsides, waste ground; throughout.

44.1.2 **Achyranthes bidentata** Blume, **FMi4** 88, **T16** 40; erect herb to 1.5 m tall; weed at the hill stations; Ph; naturalized from other parts of Asia.

44.2.1 **Allmania nodiflora** (L.) R.Br. *ex* Wight, **FMP3** 5 incl. vars. *esculenta* Ridl. & *procumbens* Ridl., **FMi4** 74, **M47** 34; herb to 80 cm tall; weed, particularly of sandy sites; scattered.

44.3.1 **Alternanthera bettzichiana** (Regel) Voss, **T16** 52; *Alternanthera ficoidea* (L.) R.Br. *ex* Roem. & Schult. var. *bettzichiana* (Regel) Backer, **FMi4** 93; red-leaved herb 20–50 cm tall; waste places, escape from cultivation; Sp; naturalized from tropical America.

44.3.2 **Alternanthera philoxeroides** (Mart.) Griseb., **FMi4** 93, **C26** 661, **M47** 36; aquatic herb creeping or floating; in stagnant shallow water; Sp; naturalized from tropical America.

44.3.3 **Alteranthera sessilis** (L.) DC., **FMP3** 10, **FMi4** 92, **T16** 49, **M47** 38; fleshy prostrate herb; common weed; throughout.

44.4.1 **Amaranthus caudatus** L., **FMP3** 6, **FMi4** 80; herb 0.3–1.5 m tall; waste places.

44.4.2 **Amaranthus lividus** L., **FMi4** 77, **T16** 17; *Amaranthus blitum* L., herb 5–80 cm tall; weed of cultivation, waste places; naturalized.

44.4.3 **Amaranthus spinosus** L., **FMP3** 6, **FMi4** 78, **T16** 9, **M47** 42; herb 15–100 cm tall; common weed; throughout; naturalized from tropical America.

44.4.4 **Amaranthus tricolor** L., **FMi4** 77, **T16** 15; *Amaranthus gangeticus* L., **FMP3** 6; *Amaranthus mangostanus* L., **FMP3** 6; herb to 2.5 m tall; waste places, roadsides to 700 m.

44.4.5 **Amaranthus viridis** L., **FMP3** 7, **T16** 19; *Amaranthus gracillis* Desf., **FMi4** 76, **M44** 40; herb 10–75 cm tall; common weed of cultivation; throughout.

44.5.1 **Celosia argentea** L., **FMP3** 5, **FMi4** 73, **T16** 3, **M47** 44; herb to 1.5 m tall; weed of cultivation, waste places; throughout; naturalized possibly from Asia.

44.6.1 **Cyathula prostrata** (L.) Blume, **FMP3** 7, **FMi4** 82, **T16** 26; herb to 50 cm tall; common in lightly shaded places, villages etc.; throughout.

44.7.1 **Deeringia amaranthoides** (Lam.) Merr., **FMi4** 71; *Deeringia celosioides* R.Br., **FMP3** 4; scandent shrub 2–6 m tall; on rocks including limestone.

44.7.2 **Deeringia polysperma** (Roxb.) Moq., **FMi4** 72, **C14** 75; *Deeringia indica* Zoll. *ex* Moq., **FMP3** 5; erect herb or shrub to 2 m tall; most often on limestone, shaded cliff bases; scattered.

44.8.1 **Gomphrena celosioides** Mart., **FMi4** 96, **T16** 53, **M47** 46; herb 10 cm–25 cm tall; waste places; Sp; naturalized from tropical America.

44.8.2 **Gomphrena globosa** L., **FMP3** 10, **FMi4** 95, **T16** 55; herb 15–60 cm tall; waste places; naturalized from tropical America.

44.9.1 **Psylotrichopsis curtisii** (Oliv.) C.C. Towns., **T15** 465; *Aerva curtisii* Oliv., FMP3 8 '*Aerua*', **FMi4** 86; straggling herb to 30 cm tall; on rocks in lowland forest, 150–1000 m; Pk; endemic.

44.10.1 **Psilotrichum ferrugineum** (Roxb.) Moq., **FMi4** 90; *Psilotrichum trichotomum* Blume, **FMP3** 8; herb 5–50 cm tall; dry open places in the hills; Pk, Sl.

45. ANACARDIACEAE

45.1.1 **Anacardium occidentale** L., **FMP1** 526, **FMi8** 421; tree to 12m; sandy places, usually near the sea; East Coast in particular; naturalized from tropical America.

45.2.1 **Androtium astylum** Stapf, **FMi8** 420, **TFM4** 13; small tree to 10 m tall; lowland swamp; once from Kluang Forest Reserve, Jh.

45.3.1 **Bouea macrophylla** Griff., **FMP1** 520, **FMi8** 468, **TFM4** 14; tree rarely to 36 m; lowland and hill forest; Tg, Pn, Pk, Ph, Ml, Sp.

45.3.2 **Bouea oppositifolia** (Roxb.) Meisn., **FMi8** 466, **TFM4** 14; *Bouea microphylla* Griff., **FMP1** 519; tree to 33 m tall; lowland forest to 700 m; widespread.

45.4.1 **Buchanania arborescens** (Blume) Blume, **FMi8** 415, **TFM4** 16; *Buchanania lucida* Blume, **FMP1** 518 incl. var. *laxiflora* Ridl.; tree to 27 m tall; common on sandy and rocky coasts and riverbanks; throughout.

45.4.2 **Buchanania sessifolia** Blume, **FMP1** 519 '*sessilifolia*', **FMi8** 418, **TFM4** 16; small to medium tree; lowland forest to 750 m; thoughout.

45.5.1 **Campnosperma auriculatum** (Blume) Hook.*f.*, **FMP1** 534 incl. var. *wallichii* (King) Ridl., **FMi8** 529, **TFM4** 18; *Campnosperma oxyrhachis* Engl., **FMP1** 534; big tree to 33 m tall; lowland and montane forest to 1600 m, often in swampy places; widespread.

45.5.2 **Campnosperma coriaceum** (Jack) Hallier *f. ex* Steenis, **FMi8** 530, **TFM4** 20; *Campnosperma griffithii* March., **FMP1** 534; tree to 40 m tall; often gregarious in peat swamp forests; Tg, Pk, Ph, Sl, Ml, Jh, ?Sp.

45.5.3 **Campnosperma squamatum** Ridl., **FMi8** 532, **TFM4** 20; tree to 30 m tall; both swampy and dry lowland forest to 1200 m; Kl, Tg, Ph, Sl, Jh, Sp.

45.6.1 **Dracontomelon dao** (Blanco) Merr. & Rolfe, **FMi8** 470, **TFM4** 20; *Dracontomelon mangiferum* (Blume) Blume, **FMP1** 543; big buttressed tree to 36 m tall; lowland forest, often near rivers; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS.

45.7.1 **Drimycarpus luridus** (Hook.*f.*) Ding Hou, **FMi8** 520, **TFM4** 21; *Swintonia lurida* (Hook.*f.*) King, **FMP1** 533; *Semecarpus glabra* Ridl., **FMP5** 303; tree to 20 m tall; lowland and hill forest to 1000 m; Tg, Pn, Pk, Sl, NS, Ml.

45.8.1 **Gluta aptera** (King) Ding Hou, **FMi8** 452, **TFM4** 24; *Melanorrhoea aptera* King, **FMP1** 531; *Melanorrhoea inappendiculata* King, **FMP1** 531; tree to 40 m tall; lowland and hill forest to 1200 m, often on ridge crests; Kl, Tg, Pn, Pk, Ph, Sl, Jh.

45.8.2 **Gluta beccarii** (Engl.) Ding Hou, **FMi8** 452, **TFM4** 24; tree to 36 m tall; on steep granitic ridges at 600 m; Tg, Ml.

45.8.3 **Gluta capituliflora** Ding Hou, **FMi8** 458, **TFM4** 24; tree to 30 m tall; hill forest 100–1000 m; Kl, Tg; endemic.

45.8.4 **Gluta curtisii** (Oliv.) Ding Hou, **FMi8** 454, **TFM4** 25; *Melanorrhoea curtisii* Oliv., **FMP1** 530; tree to 34 m tall; hill forest 250–1200 m, commonly on ridges; Kd, Kl, Pn, Pk, Ph, Sl, Jh; endemic.

45.8.5 **Gluta elegans** (Wall.) Hook.*f.*, **FMP1** 527, **FMi8** 461, **TFM4** 25; tree to 27 m tall; lowland forest to 300 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl.

45.8.6 **Gluta lanceolata** Ridl., **FMP1** 527, **FMi8** 458, **TFM4** 28; tree to 30 m tall; lowland rain forest to 450 m; Kd, Pn, Pk; endemic.

45.8.7 **Gluta macrocarpa** (Engl.) Ding Hou, **FMi8** 454, **TFM4** 28; *Melanorrhoea macrocarpa* Engl., **FMP1** 530; tree to 30 m tall; lowland and hill forest to 1200 m; Kd, Kl, Tg, Pk, Ph, Sl.

45.8.8 **Gluta malayana** (Corner) Ding Hou, **FMi8** 455, **TFM4** 28; tree to 45 m tall; lowland forest, including swamps; Kd, Tg, Pk, Ph, Sl, Jh.

45.8.9 **Gluta pubescens** (Ridl.) Ding Hou, **FMi8** 450, **TFM4** 28; *Melanorrhoea pubescens* Ridl., **FMP1** 530; tree to 40 m tall; lowland forest, including swamps, to 400 m; Kl, Tg, Ph, NS, Ml, Jh.

45.8.10 **Gluta renghas** L., **FMP1** 527 '*benghas*', **FMi8** 463, **TFM4** 29; tree to 30 m tall; riverside tree of tidal freshwater reaches; P. Lankawi, Kl, Tg, Ph, Jh.

45.8.11 **Gluta tavoyana** Wall. *ex* Hook.*f.*, **FMi8** 459, **TFM4** 29; tree to 36 m tall; lowland forest to 300 m; Kl, Pn, Jh.

45.8.12 **Gluta torquata** (King) Tardieu, **FMi8** 455, **TFM4** 29; *Melanorrhoea torquata* King; **FMP1** 531; tree to 30 m tall; lowland forest; Kd, Pk, Sl, Jh.

45.8.13 **Gluta velutina** Blume, **FMi8** 461, **TFM4** 30; *Gluta coarctata* Hook.*f.*, **FMP1** 527; large shrub or stilt-rooted tree to 20 m tall; banks of tidal rivers; Kd, Pk, Ph, Sl, Jh.

45.8.14 **Gluta wallichii** (Hook.*f.*) Ding Hou, **FMi8** 456, **TFM4** 30; *Melanorrhoea wallichii* Hook.*f.*, **FMP1** 529; *Melanorrhoea woodsiana* Hook.*f.*, **FMP1** 530; big tree to 45 m tall; lowland and hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

45.8.15 **Gluta wrayi** King, **FMP1** 528, **FMi8** 456, **TFM4** 30; *Gluta virosa* Ridl., **FMP1** 528; tree to 30 m tall; lowland forest; Kl, Tg, Pn, Pk, Sl.

Mangifera - Kostermans and Bompard (**K63**) have recently resurrected many of the *Mangifera* species synonymized in the revisions of Ding Hou (**FM**) and Kochummen (**TFM**). I have generally followed the broader species concept of these authors.

45.9.1 **Mangifera caesia** Jack, **FMP1** 525, **FMi8** 458, **K63** 149; *Mangifera kemanga* Blume, **FMP1** 525, **K63** 153; tree to 36 m tall; lowland forest to 450 m, also cultivated; Kd, Kl, Tg, Pn, Pk, Ph, Ml, Jh.

45.9.2 **Mangifera foetida** Lour., **FMP1** 524, **FMi8** 435, **TFM4** 35, **K63** 159; tree to 36 m tall; lowland and hill forest to 600 m, also cultivated; throughout.

45.9.3 **Mangifera gedebe** Miq., **K63** 29; tree to 30 m tall; marshy spots; Ps.

45.9.4 **Mangifera gracilipes** Hook.*f.*, **FMP1** 523, **FMi8** 433, **TFM4** 35, **K63** 47; tree to 30 m tall; lowland forest; Tg, Pk, Ph, Sl, Ml, Jh; endemic.

45.9.5 **Mangifera griffithii** Hook.*f.*, **FMP1** 521, **FMi8** 430, **TFM4** 35, **K60** 42; *Mangifera microphylla* Griff. *ex* Hook.*f.*, **FMP1** 521, **K63** 49; *Mangifera sclerophylla* Hook.*f.*, **FMP1** 521; tree to 40 m tall; wet lowland forest to 360 m; Kd, Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

45.9.6 **Mangifera lagenifera** Griff., **FMP1** 525, **FMi8** 433, **TFM4** 36, **K63** 157; tree to 40 m tall; lowland rain forest to 150 m, also in cultivation; Pk, Ph, NS, Ml, Jh, Sp.

45.9.7 **Mangifera laurina** Blume, **K63** 120; *Mangifera longipes* Griff., **FMP1** 523, **FMi8** 428; tree to 35 m tall; lowland forest; Kl, Pk, Sl, Jh, Sp.

45.9.8 **Mangifera leschenaultii** Marchand, **K63** 166; tree to 30 m tall; lowland forest; Pk.

45.9.9 **Mangifera macrocarpa** Blume, **FMP1** 524, **FMi8** 439, **TFM4** 37, **K63** 157; tree to 33 m tall; lowland forest to 700 m; Kl, Tg, Pk, Ph, NS, Ml.

45.9.10 **Mangifera magnifica** Kochummen, **TFM4** 37, **K63** 75; big tree reaching 54 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

45.9.11 **Mangifera odorata** Griff., **FMP1** 524, **FMi8** 437, **TFM4** 37, **K63** 167; *Mangifera oblongifolia* Hook.*f.*, **FMP1** 523, **K63** 113; tree to 24 m tall; lowland forest, more often in cultivation; Kl, Pn, Tg, Pk, Ph, NS, Ml, Jh, Sp.

45.9.12 **Mangifera orophila** Kosterm., **K63** 138; *Mangifera sp. B*, **TFM4** 40; tree to 30 m tall; lower montane forest 1000–1500 m; Fraser's Hill & Cameron Highlands, Ph.

45.9.13 **Mangifera paludosa** Kosterm., **K63** 41; tree to 30 m tall; freshwater swamp forest; Ph, Ml, Sp.

45.9.14 **Mangifera parvifolia** Boerl. & Koord., **FMI8** 431, **K63** 39; tree to 29 m tall; lowland rain forest; Tg, Sp.

45.9.15 **Mangifera pentandra** Hook.*f.*, **FMP1** 522, **FMI8** 426, **TFM4** 38, **K63** 36; *Mangifera lanceolata* Ridl., **FMP1** 522; tree to 24 m tall; forest near the sea, in villages; Ps, Kd, Pk, Ph, Sl, Ml, Jh, Sp.

45.9.16 **Mangifera quadrifida** Jack, **FMP1** 522, **FMI8** 429, **TFM4** 38 incl. var. *longipetiolata* (King) Kochummen, **K63** 68; *Mangifera maingayi* Hook.*f.*, **FMP1** 522, **K63** 178; *Mangifera longipetiolata* King, **FMP1** 522, **K63** 66; tree to 40 m tall; lowland rain forest to 900m; Kd, Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

45.9.17 **Mangifera subsessilifolia** Kosterm., **K63** 180; *Mangifera sp. A*, **TFM4** 39; tree to 28 m tall; lowland forests; Kd, Pn, Kl, Ph, NS, Jh, Sp.

45.9.18 **Mangifera superba** Hook.*f.*, **FMP1** 525, **FMI8** 439, **TFM4** 39, **K63** 144; tree to 27 m tall; cultivated, rarely wild in lowland forest; Kd, Pk, Ph, NS, Ml, Jh; endemic.

45.9.19 **Mangifera swintonioides** Kosterm., **K63** 80; tree to 40 m tall; wet lowland forest; Pk, Ph, Jh.

Additionally, **K63** list [page number] the following species all based on single, sterile collections: *Mangifera applanata* Kosterm. [64], *Mangifera blommesteinii* Kosterm. [146], *Mangifera bullata* Kosterm. [175], *Mangifera rufocostata* Kosterm. [116], *Mangifera torquenda* Kosterm. [60].

45.10.1 **Melanochyla angustifolia** Hook.*f.*, **FMP1** 541, **FMI8** 496, **TFM4** 41; tree to 27 m tall; lowland forest to 600 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.

45.10.2 **Melanochyla auriculata** Hook.*f.*, **FMP1** 540, **FMI8** 495, **TFM4** 41; tree to 24 m tall; lowland forest; Kl, Ph, NS, Ml, Jh, Sp.

45.10.3 **Melanochyla bracteata** King, **FMP1** 540, **FMI8** 496, **TFM4** 42; buttressed or stilt-rooted tree to 39 m tall; lowland swampy forest; Tg, Pn, Pk, Ph, Sl, Jh, Sp.

45.10.4 **Melanochyla caesia** (Blume) Ding Hou, **FMI8** 498, **TFM4** 42; *Melanochyla kunstleri* King, **FMP1** 539, **FMI8** 499; *Melanochyla tomentosa* Hook.*f.* var. *glabrescens* Koord. & Valeton, **FMP1** 539; *Melanochyla maingayi* Hook.*f.*, **FMP1** 540; tree to 30 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS, Jh.

45.10.5 **Melanochyla fasciculiflora** Kochummen, **TFM4** 42; shrub to 5 m tall; lowland forest; only known from Rengam F.R., Jh; endemic.

45.10.6 **Melanochyla fulvinervis** (Blume) Ding Hou, **FMı8** 493, **TFM4** 42; *Melanochyla rugosa* King, **FMP1** 540; tree to 28 m tall; lowland forest, occasional in the hills to 1350 m; Kl, Th, Pk, Ph, Sl, NS, Jh.

45.10.7 **Melanochyla nitida** King, **FMP1** 541, **FMı8** 496, **TFM4** 43; tree to 18 m tall; lowland forest, including swamps, to 360 m; Pn, Pk; endemic.

45.10.8 **Melanochyla tomentosa** Hook.*f*., **FMP1** 539, **FMı8** 498, **TFM4** 43; *Melanochyla densiflora* King, **FMP1** 539, **FMı8** 497; tree to 33 m tall, usually smaller; lowland to montane forest; Kd, Pk, Sl, Ml, Jh.

45.10.9 **Melanochyla sp. A**, **TFM4** 44; small tree to 12 m tall; lowland forest at 300 m; once from Taman Negara, Ph; endemic.

45.11.1 **Parishia insignis** Hook.*f*., **FMP1** 536, **FMı8** 545, **TFM4** 45; *Parishia pubescens* Hook.*f*., **FMP1** 535; *Parishia rosea* Ridl., **FMP1** 536, **C14** 77; very tall tree reaching 60 m; lowlands to 300 m, including swamps and on limestone; Kd, Kl, Pn, Pk, Ph, Ml, Jh, Sp.

45.11.2 **Parishia maingayi** Hook.*f*., **FMP1** 535, **FMı8** 543, **TFM4** 45; tree to 30 m tall; lowland and hill forest to 600 m, mainly on ridge crests; Tg, Pk, Ph, Sl, Jh, Sp.

45.11.3 **Parishia paucijuga** Engl., **FMP1** 536, **FMı8** 544, **TFM4** 46; tree to 40 m tall; lowland and hill forest to 400 m; Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

45.12.1 **Pentaspadon curtisii** (King) Corner, **FMı8** 524, **C14** 77, **TFM4** 47; *Microstemon curtisii* King, **FMP1** 537; tree to 36 m tall; on limestone; P. Langkawi.

45.12.2 **Pentaspadon motleyi** Hook.*f*., **FMP1** 538, **FMı8** 524, **TFM4** 47; *Pentaspadon officinalis* Holmes *ex* King, **FMP1** 537; tree to 36 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS, Jh.

45.12.3 **Pentaspadon velutinus** Hook.*f*., **FMı8** 523, **TFM4** 47; *Microstemon velutina* (Hook.*f*.) Engl., **FMP1** 537; big tree to 48 m tall; lowland and hill forest, often by streams; Kl, Pk, Ph, Sl, NS, Ml.

45.13.1 **Pistacia malayana** M.R. Hend., **FMı8** 547, **C14** 77, **TFM4** 48; small tree to 6 m tall; restricted to limestone at 150–350 m; Kl, Pk, Ph, Sl; endemic.

45.14.1 **Rhus nodosa** Blume; **FMı8** 539, **TFM4** 50; *Rhus perakensis* Scort., **FMP1** 538; slender woody climber or scrambling shrub to 15 m long; near rocky streams in the lowlands; Pk, Ph.

45.14.2 **Rhus succedanea** L., **FMı8** 539, **TFM4** 50; tree to 40 m tall; lower montane forest at about 1400 m; Fraser's Hill & Cameron Highlands, Ph.

45.15.1 **Semecarpus cochinchinensis** Engl., **FMP1** 542, **FMı8** 516, **TFM4** 51; *Semecarpus glomerulatus* Ridl., **FMP1** 542 '*glomerata*', **C14** 78; shrub or small tree 8–15 m tall; limestone hills; Ps, P. Langkawi, Kd.

45.15.2 **Semecarpus curtisii** King, **FMP1** 542, **FMı8** 511, **TFM4** 51; *Semecarpus curtisii* King var. *brevipetiolatus* M.R. Hend., **FMP5** 302 '*brevipetiolata*'; shrub or small tree to 12 m tall; lowland forest; Ps, Kd, Ph, Sl, NS, Jh, ?Sp.

45.15.3 **Semecarpus lucens** King, **FMP1** 543, **FMı8** 513, **TFM4** 51; tree to 21 m tall; lowland and hill forest to 900 m; Pk, Sl.

45.15.4 **Semecarpus prainii** King, **FMP5** 303, **FMı8** 509, **TFM4** 52; tree to 15 m tall; lowland forest; Pk, Ph.

45.15.5 **Semecarpus rufovelutinus** Ridl., **FMı8** 513, **TFM4** 52; small tree to 9 m tall; lowland forest; Ph, Jh.

45.15.6 **Semecarpus trengganuensis** Kochummen, **TFM4** 52; shrub to 3 m tall; lowland forest; Tg, Ph; endemic.

45.15.7 **Semecarpus velutinus** King, **FMP1** 541, **FMı8** 517, **TFM4** 52; tree to 18 m tall; lowland forest; Tg, Pk, Sl, Ml, Jh.

There is also one doubtful record of *Semecarpus heterophyllus* Blume [**FMP5** 302, **FMı8** 512] from Sp.

45.16.1 **Spondias cytherea** Sonn., **FMı8** 481, **TFM4** 53; tree to 40 m tall; lowland forest incl. limestone, often cultivated; Kd, Kl, Tg, Pk, Ph, Sl.

45.16.2 **Spondias pinnata** (L.*f.*) Kurz, **FMı8** 483, **TFM4** 54; tree 20–25 m tall; lowland forest incl. limestone, often cultivated; Kd, Pk, P. Langkawi.

Kostermans [**K62**] argues that true *Spondias pinnata* does not occur in Malesia. Malayan specimens identified as such represent *Spondias malayana* Kosterm. and *Spondias acida* Blume, though he only cites one sterile specimen of the latter from Gg Baling, Kd. He also states that *Spondias cytherea* is only found in Malaya as a cultivated tree, which he calls *Evia dulcis* (Parkinson) Kosterm.

45.17.1 **Swintonia floribunda** Griff., **FMı8** 445, **TFM4** 55 incl. var. *penangiana* (King) Kochummen; *Swintonia puberula* H. Pearson, **FMP1** 532; *Swintonia penangiana* King, **FMP1** 533; large tree to 45 m tall; lowland and hill forest to 1000 m; Kd, Kl, Pn, Ph, Sl, NS, Jh.

45.17.2 **Swintonia robinsonii** Ridl., **FMP1** 532, **FMı8** 444, **TFM4** 55; small gnarled tree to 12 m tall; mountain ridges at 1050–1650 m; Kl, Tg, Ph; endemic.

45.17.3 **Swintonia schwenkii** (Teijsm. & Binn.) Teijsm. & Binn., **FMP1** 533, **FMı8** 443, **TFM4** 57; very tall trees reaching 50 m; lowland and hill forest to 700 m; Kd, Tg, Pn, Ph, Sl, NS, Ml, Jh, Sp.

45.17.4 **Swintonia spicifera** Hook.*f*., **FMP1** 532, **FMi8** 445, **TFM4** 57; tree to 45 m tall; lowland and hill forest to 500 m; Kd, Pn, Pk, NS, Ml, Jh; endemic.

45.17.5 **Swintonia whitmorei** (Kochummen) Kosterm., **K61** 347; *Mangifera whitmorei* Kochummen, **TFM4** 39; tree to 30 m tall; lowland forest at 150 m; only known from type, Upper Pk; endemic.

46. ANCISTROCLADACEAE

46.1.1 **Ancistrocladus tectorius** (Lour.) Merr., **FMi4** 251; *Ancistrocladus pinangianus* Planch., **FMP1** 251; trailing shrub or liana; sandy places, often near the sea; widespread.

47. ANISOPHYLLEACEAE

47.1.1 **Anisophyllea apetala** Scort. *ex* King, **FMP1** 702, **FMi5** 478, **TFM4** 305; small tree to 14 m tall; lowland and hill forest to 600 m; Tg, Pk, Sl, Jh.

47.1.2 **Anisophyllea corneri** Ding Hou, **FMi5** 478, **TFM4** 305; tree to 30 m tall; lowland and hill forest to 1000 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

47.1.3 **Anisophyllea curtisii** King, **FMP1** 702, **FMi5** 477, **TFM4** 305; tree to 33 m tall; lowland and hill forest; Pn, Pk, Jh.

47.1.4 **Anisophyllea disticha** (Jack) Baill., **FMP1** 701, **FMi5** 479, **TFM4** 307; shrub or small pagoda tree to 7 m tall; lowland to montane forest; common throughout.

47.1.5 **Anisophyllea grandis** (Benth.) Burkill, **FMi5** 477, **TFM4** 307; *Anisophyllea gaudichaudiana* Baill., **FMP1** 702; tree to 30 m tall; lowland and hill forest to 700 m; Kd, Pn, Pk; endemic.

47.1.6 **Anisophyllea griffithii** Oliv., **FMP1** 702, **FMi5** 476, **TFM4** 307; tree to 36 m tall; hill forests, often on ridges; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

47.1.7 **Anisophyllea reticulata** Kochummen, **W30** 268, **TFM4** 307; tree to 21 m tall; lowland forest; only known from type, Ulu Endau, Ph; endemic.

47.1.8 **Anisophyllea scortechinii** King, **FMP1** 701, **FMi5** 479, **TFM4** 309; small tree to 10 m tall; lowland forest; Kd, Tg, Pn, Pk, Ph, Jh.

47.2.1 **Combretocarpus rotundatus** (Miq.) Danser, **FMi5** 480, **TFM4** 317; tree to 25 m tall; peat swamp forest; once collected near Air Hitam, Jh.

48. ANNONACEAE

48.1.1 **Alphonsea boniana** Finet & Gagnep., **L13** 54, **K19** 86; tree to 15 m tall; lowland forest; once from near Jeli, Kl.

48.1.2 **Alphonsea cylindrica** King, **FMP1** 99, **S24** 385, **TFM1** 67, **K19** 88; tree to 13 m tall; lowland forest; Kd, Pk, Sl.

48.1.3 **Alphonsea elliptica** Hook.*f.* & Thomson, **S24** 388, **TFM1** 67, **K19** 88; *Alphonsea maingayi* Hook.*f.* & Thomson var. *elliptica* (Hook.*f.* & Thomson) Ridl., **FMP1** 98; tree to 25 m tall; lowland forest; Tg, Ph, Sl, NS, Ml, Jh.

48.1.4 **Alphonsea javanica** Scheff., **TFM1** 67, **K19** 88; tree 10–30 m tall; lowland forest; Jh.

48.1.5 **Alphonsea johorensis** J. Sinclair, **S24** 386, **TFM1** 67, **K19** 88; tree to 20 m tall; lowland swamp forest; S.E. Jh.

48.1.6 **Alphonsea kingii** J. Sinclair, **S24** 386, **TFM1** 67, **K19** 103; *Xylopia dicarpa* (*non* Hook.*f.* & Thomson) King, **FMP1** 91 in part; tree to 8 m tall; lowland forest; Pk; endemic.

48.1.7 **Alphonsea lucida** King, **FMP1** 98, **S24** 387, **TFM1** 67, **K19** 94; shrub to 3 m tall; lowland forest; Pk, Ph; endemic.

48.1.8 **Alphonsea maingayi** Hook.*f.* & Thomson, **FMP1** 98, **S24** 384, **TFM1** 67, **K19** 96; tree to 20 m tall; lowland forest; Pk, Sl, NS, Ml, Jh, Sp; endemic.

48.1.9 **Alphonsea malayana** P. Kessler, **K19** 97; *Alphonsea sp. C*, **TFM1** 67; tree 10–20 m tall; hill tops at 1000–2000 m; Ph; endemic.

48.1.10 **Alphonsea sp. A**, **TFM1** 67, tree to 35 m tall; once from Kd; endemic.

48.1.11 **Alphonsea sp. B**, **TFM1** 66; tree; lowland swamp forest; Tg, Ph, Jh; endemic.

48.1.12 **Alphonsea sp. D**, **TFM1** 66; small tree; once from Gg Inas, Kd; endemic.

48.2.1a **Anaxagorea javanica** Blume var. **dipetala** Corner, **S24** 349, **TFM1** 68; small tree; lowland and hill forest; Jh; endemic variety.

48.2.1b **Anaxagorea javanica** Blume var. **javanica**, **S24** 347, **TFM1** 68; *Anaxagorea scortechinii* King, **FMP1** 62; *Mitrephora crassipetala* Ridl., **FMP1** 74; small tree to 6 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, ?Sp.

48.2.1c **Anaxagorea javanica** Blume var. **tripetala** Corner, **S24** 349, **TFM1** 68; small tree; lowland and hill forest; Kd, Tg, Pk, Sl.

48.3.1 **Artabotrys costatus** King, **FMP1** 43, **S24** 255; liana to 25 m long; lowland forest; Pk, NS, Sp.

48.3.2 **Artabotrys crassifolius** Hook.*f.* & Thomson, **FMP1** 40, **S24** 249; stout woody climber; lowland forest; Tg, Pk, Ph, Sl, Ml, Sp.

48.3.3 **Artabotrys gracilis** King, **FMP1** 42, **S24** 258; liana to 25 m long; lowland forest; Pk.

48.3.4 **Artabotrys grandifolius** King, **FMP1** 39, **S24** 253; liana to 25 m long; lowland forest; Kd, Pk, Ph; endemic.

48.3.5 **Artabotrys lowianus** Scort. *ex* King, **FMP1** 41, **S24** 251; stout woody climber; only known from Pk; endemic.

48.3.6 **Artabotrys maingayi** Hook.*f.* & Thomson, **FMP1** 259, **S24** 259; liana to 25 m long; lowland forest; Pk, Ml, Sp; endemic.

48.3.7 **Artabotrys oblongus** King, **FMP1** 41, **S24** 254; liana to 23 m long; only known from type, Larut, Pk; endemic.

48.3.8 **Artabotrys oxycarpus** King, **FMP1** 41, **S24** 250; liana to 25 m long; lowland forest; only known from Pk; endemic.

48.3.9 **Artabotrys pleurocarpus** Maingay *ex* Hook.*f.* & Thomson, **FMP1** 39, **S24** 251; liana; lowland forest; Kd, Pk, Ml; endemic.

48.3.10 **Artabotrys scortechinii** King, **FMP1** 39, **S24** 253; liana; once each from P. Langkawi and Pk; endemic.

48.3.11 **Artabotrys suaveolens** (Blume) Blume, **FMP1** 42, **S24** 256; liana; common in lowland forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.3.12 **Artabotrys venustus** King, **FMP1** 40, **S24** 252; liana to 25 m long; lowland to lower montane forest; Pk, Ph, NS, Ml, Jh.

48.3.13 **Artabotrys wrayi** King, **FMP1** 40, **S24** 248; woody climber; lowland forest; Pk, Jh, Sp; endemic.

48.4.1 **Cananga latifolia** (Hook.*f.* & Thomson) Finet & Gagnep., **S24** 326, **TFM1** 70; *Canangium latifolium* (Hook.*f.* & Thomson) Ridl., **FMP1** 44; tree to 20 m tall; Ps, P. Langkawi.

48.4.2 **Cananga odorata** (Lam.) Hook.*f.* & Thomson, **S24** 324, **TFM1** 70; *Canangium scortechinii* King, **FMP1** 43; tree to 33 m tall; forest margins; NS northwards.

48.5.1 **Cyathocalyx carinatus** (Ridl.) J. Sinclair, **S24** 241, **TFM1** 71; *Drepananthus carinatus* Ridl., **FMP1** 38; small tree; lowland forest; Pk, Sl.

48.5.2 **Cyathocalyx olivaceus** (King) J. Sinclair, **S24** 242, **TFM1** 71; *Xylopia olivacea* King, **FMP1** 94; small tree; lowland and hill forest; only known from Pk; endemic.

48.5.3 **Cyathocalyx pahangensis** (M.R. Hend.) J. Sinclair, **S24** 240, **TFM1** 71; *Drepananthus pahangensis* M.R. Hend., **H31** 49; tree to 10 m tall; lowland forest; Tg, Ph, Jh; endemic.

48.5.4 **Cyathocalyx pruniferus** (Maingay *ex* Hook.*f.* & Thomson) J. Sinclair, **S24** 239, **TFM1** 71; *Drepananthus pruniferus* Maingay *ex* Hook.*f.* & Thomson, **FMP1** 37; tree to 23 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh; endemic.

48.5.5 **Cyathocalyx ramuliflorus** (Maingay *ex* Hook.*f.* & Thomson) Scheff., **S24** 243, **TFM1** 71; *Drepananthus ramuliflorus* Maingay *ex* Hook.*f.* & Thomson, **FMP1** 38; tall tree; lowland forest; Ml, Sp.

48.5.6 **Cyathocalyx ridleyi** (King) J. Sinclair, **S24** 237, **TFM1** 71; *Xylopia ridleyi* King, **FMP1** 95; small tree; damp lowland forest; Ph, Jh, Sp.

48.5.7 **Cyathocalyx scortechinii** (King) J. Sinclair, **S24** 244, **TFM1** 71; *Xylopia scortechinii* King, **FMP1** 94; tree to 23 m tall; lowland to lower montane forest; Pk, Ph; endemic.

48.5.8 **Cyathocalyx sumatranus** Scheff., **S24** 236, **TFM1** 71; *Xylopia curtisii* King, **FMP1** 90; tree to 23 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph, NS, Sp.

48.6.1 **Cyathostemma acuminatum** King, **FMP1** 28, **S24** 227; woody climber; only known from type, Pk; endemic.

48.6.2 **Cyathostemma argenteum** (Blume) J. Sinclair, **S24** 220; woody climber; lowland forest; Ph, Sl.

48.6.3 **Cyathostemma excelsum** (Hook.*f.* & Thomson) J. Sinclair, **S24** 226; *Uvaria excelsa* Wall. *ex* King, **FMP1** 34; large woody climber reaching 30 m; lowland and hill forest; Pn, Pk, Ph, Sl.

48.6.4 **Cyathostemma hookeri** King, **FMP1** 28, **S24** 223; woody climber to 25 m high; lowland and hill forest; Pn, Pk, Sp.

48.6.5 **Cyathostemma micranthum** (A. DC.) J. Sinclair, **S24** 225; *Uvaria micrantha* (A. DC.) Hook.*f.* & Thomson, **FMP1** 33; woody climber; lowland forest; P. Langkawi, Pn, Pk, Ph, Ml, Jh.

48.6.6 **Cyathostemma viridiflorum** Griff., **FMP1** 27 incl. var. *scortechinii* (King) Ridl., **S24** 221; woody climber to 25 m tall; swampy lowland forest; Ps, Pk, Ph, NS, Ml, Jh, Sp; endemic.

48.6.7 **Cyathostemma wrayi** King, **FMP1** 27, **S24** 224; woody climber to 20 m tall; lowlands, sometimes on limestone; Pn, Pk, Ph, Sl.

48.7.1 **Dendrokingstonia nervosa** (Hook.*f.* & Thomson) Rauschert, **R08** 555; *Kingstonia nervosa* Hook.*f.* & Thomson, **FMP1** 100, **S24** 184, **TFM1** 76; tree to 15 m tall; lowland forest; Pk, Ph, Sl, NS, Ml.

48.8.1 **Desmos chinensis** Lour., **FMP1** 46, **S24** 266; scandent shrub; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, ?Sp.

48.8.2 **Desmos cochinchinensis** Lour., **FMP1** 45, **S24** 264; climber or scandent shrub; lowland forest; Kd, Pn, Kl, Pk, Ph.

48.8.3a **Desmos dasymaschalus** (Blume) Safford var. **dasymaschalus**, **FMP1** 46, **S24** 69; shrub to 8 m tall; lowland forest; throughout.

48.8.3b **Desmos dasymaschalus** (Blume) Safford var. **wallichii** (Hook.*f.* & Thomson) Ridl., **FMP1** 47, **S24** 270; shrub to 8 m tall; lowland forest; Ps, Pn, Kl, Tg, Pk, Ph, Jh, Sp.

48.8.4 **Desmos dumosus** (Roxb.) Safford, **FMP1** 46, **S24** 268; scandent shrub; lowland forest; Kl, Pk, Ph, Sl, Ml, Jh, Sp.

48.8.5 **Desmos dunalii** (Hook.*f.* & Thomson) Safford, **FMP1** 45, **S24** 263; liana to 30 m long; lowland forest; Pn, Pk, Ph, Ml.

48.8.6 **Desmos filipes** (Ridl.) Ridl., **FMP1** 47, **S24** 271; shrub 3–6 m tall; hill forest; Pk, NS, Sl.

48.8.7 **Desmos teysmannii** (Boerl.) Merr., **S24** 264; climbing shrub; once from Pk.

48.9.1 **Disepalum longipes** King, **J17** 373; *Disepalum anomalum auctt. plur., non* Hook.*f.*, **FMP1** 63, **S24** 332, **TFM1** 73; tree to 8 m tall; hill forest on ridges; Pk, Jh.

48.9.2 **Disepalum pulchrum** (King) J. Sinclair, **S24** 333 incl. var. *angustifolium* (King) J. Sinclair, **TFM1** 73, **J17** 367; *Polyalthia pulchra* King, **FMP1** 57 incl. var. *angustifolia* King, tree to 14 m tall; montane forest at 1200–1900 m; Kl, Pk, Ph, Sl; endemic.

48.10.1 **Ellipeia cuneifolia** Hook.*f.* & Thomson, **FMP1** 35, **S24** 230; liana to 50 m tall; lowland and hill forest; Pk, Sl, Ml, Sp.

48.11.1 **Enicosanthum congregatum** (King) Airy Shaw, **S24** 194, **TFM1** 74; *Polyalthia congregata* King, **FMP1** 60; tree to 20 m tall; lowland forest, sometimes on limestone; Pk, Sl; endemic.

48.11.2 **Enicosanthum cupulare** (King) Airy Shaw, **S24** 188, **TFM1** 74; *Griffithia cupularis* King, **FMP1** 26; tree to 17 m tall; lowland forest; Tg, Pk; endemic.

48.11.3 **Enicosanthum fuscum** (King) Airy Shaw, **S24** 189, **TFM1** 74; *Griffithia fusca* King, **FMP1** 26; tree to 20 m tall; lowland and hill forest; Pk, Ph; endemic.

48.11.4 **Enicosanthum macranthum** (King) J. Sinclair, **S24** 190, **TFM1** 74; *Polyalthia macrantha* King, **FMP1** 58; tree to 23 m tall; Pk; endemic.

48.11.5 **Enicosanthum magnoliiflorum** (Hook.*f.* & Thomson) Airy Shaw, **S24** 187, **TFM1** 74; *Griffithia magnoliipetala* Maingay *ex* King, **FMP1** 26; tree to 17 m tall; lowland forest; Pk, Ph, Sl, Ml.

48.11.6 **Enicosanthum membranifolium** J. Sinclair, **S24** 191, **TFM1** 74; tree to 12 m tall; lowland forest; P. Langkawi, Pn, Kl, Sl.

48.11.7 **Enicosanthum praestigiosum** J. Sinclair, **S24** 192, **TFM1** 74; tree about 15 m tall; lowland freshwater swamp forest; S.E. Jh; endemic.

48.12.1 **Fissistigma fulgens** (Hook.*f.* & Thomson) Merr., **S24** 353; *Melodorum fulgens* Hook.*f.* & Thomson, **FMP1** 83; large liana; lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

48.12.2 **Fissistigma hypoglaucum** (Miq.) Merr., **S24** 352; *Melodorum hypoglaucum* Miq., **FMP1** 86; large woody creeper; lowland forest; Pk.

48.12.3 **Fissistigma kingii** (Boerl.) Burkill, **S24** 358; *Melodorum kingii* Boerl., **FMP1** 85; liana; lowland forest; Pk, Ph, Sl, Ml, Jh.

48.12.4 **Fissistigma lanuginosum** (Hook.*f.* & Thomson) Merr., **S24** 357; *Melodorum lanuginosum* Hook.*f.* & Thomson, **FMP1** 86; liana; lowland forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.12.5a **Fissistigma latifolium** (Dunal) Merr. var. **latifolium**, **S24** 359; *Melodorum latifolium* (Dunal) Hook.*f.* & Thomson, **FMP1** 85; liana; lowland and hill forest; Pk.

48.12.5b **Fissistigma latifolium** (Dunal) Merr. var. **ovoideum** (King) J. Sinclair, **S24** 359; *Melodorum latifolium* (Dunal) Hook.*f.* & Thomson var. *ovoideum* King, **FMP1** 85; liana; lowland and hill forest; Pn, Tg, Pk, Sl, NS, Ml, Jh, Sp.

48.12.6 **Fissistigma litseifolium** (King) Merr., **S24** 351; *Melodorum litseifolium* King, **FMP1** 83; liana; lowland forest; Tg, Pk; endemic.

48.12.7 **Fissistigma manubriatum** (Hook.*f.* & Thomson) Merr., **S24** 355; *Melodorum manubriatum* Hook.*f.* & Thomson, **FMP1** 84; stout liana to 30 m long; lowland and hill forest; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.12.8 **Fissistigma rubiginosum** (A. DC.) Merr., **S24** 361; *Melodorum rubiginosum* (A. DC.) Hook.*f.* & Thomson, **FMP1** 88; liana; lowland forest; P. Langkawi, Pn, Pk, Ph.

48.13.1 **Friesodielsia affinis** (Hook.*f.* & Thomson) D. Das, **V17** 357; *Oxymitra affinis* Hook.*f.* & Thomson, **S24** 450; liana; lowland forest; Pn, Pk, Ml, Jh.

48.13.2 **Friesodielsia alpina** (J. Sinclair) Steenis, **V17** 358; *Oxymitra alpina* J. Sinclair, **S24** 455; scandent shrub; montane forest; only known from type, Maxwell's Hill, Pk; endemic.

48.13.3 **Friesodielsia argentea** (J. Sinclair) Steenis, **V17** 358; *Oxymitra argentea* J. Sinclair, **S24** 461; scandent shrub; lowland forest, recorded from limestone; Kl, Tg, Pk.

48.13.4 **Friesodielsia biglandulosa** (Blume) Steenis, **V17** 358; *Oxymitra biglandulosa* (Blume) Scheff., **FMP1** 81; liana to 35 m high; lowland forest; Pk, Sl, Ml, Sp.

48.13.5 **Friesodielsia borneensis** (Miq.) Steenis, **V17** 358; *Oxymitra borneensis* Miq. var. *sumatrana* Miq., **S24** 458; liana; lowland forest; Jh, Sp.

48.13.6 **Friesodielsia calycina** (King) Steenis, **V17** 358; *Oxymitra calycina* King, **FMP1** 81, **S24** 451; liana; climbing to 13 m; lowland and hill forest; Pn, Pk, ?Sp; endemic.

48.13.7 **Friesodielsia discolor** (Craib) D. Das, **V17** 359; *Oxymitra fornicata* Hook.*f.* & Thomson var. *glabra* Ridl., **FMP1** 80; *Oxymitra discolor* Craib; **S24** 457; liana; lowland forest; P. Langkawi, Ml.

48.13.8 **Friesodielsia excisa** (Miq.) Steenis, **V17** 359; *Oxymitra excisa* Miq., **S24** 452; liana; lowland forest; once from Sg Sembawang, Sp.

48.13.9 **Friesodielsia filipes** (Hook.*f.* & Thomson) Steenis, **V17** 359; *Oxymitra filipes* Hook.*f.* & Thomson, **FMP1** 80, **S24** 454; liana; lowland and hill forest; Kl, Pk, Ph, Sl, Ml, Jh; endemic.

48.13.10 **Friesodielsia glauca** (Hook.*f.* & Thomson) Steenis, **V17** 359; *Oxymitra glauca* Hook.*f.* & Thomson, **FMP1** 82, **S24** 460; liana; lowland and hill forest; Kd, Pn, Kl, Pk, Ph, Ml, Jh, Sp.

48.13.11 **Friesodielsia kingii** (J. Sinclair) Steenis, **V17** 360; *Oxymitra affinis* (*non* Hook.*f.* & Thomson) King, **FMP1** 79; *Oxymitra kingii* J. Sinclair, **S24** 453; scandent shrub; lowland forest; Pk, Ph, Jh.

48.13.12 **Friesodielsia latifolia** (Hook.*f.* & Thomson) Steenis, **V17** 360; *Oxymitra latifolia* Hook.*f.* & Thomson, **FMP1** 81, **S24** 456; liana to 20 m long; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.14.1 **Goniothalamus calycinus** J. Sinclair, **S24** 440, **TFM1** 76; tree to 7 m tall; hill forest; Tg; endemic.

48.14.2 **Goniothalamus curtisii** King, **FMP1** 68, **S24** 439, **TFM1** 76; tree to 10 m tall; lowland to lower montane forest, including limestone; Kl, Pk, Ph, Sl; endemic.

48.14.3 **Goniothalamus fulvus** Hook.*f.* & Thomson, **FMP1** 68, **S24** 428, **TFM1** 75; shrub; lowland forest; Tg, Ph, Ml, Jh; endemic.

48.14.4 **Goniothalamus giganteus** Hook.*f.* & Thomson, **FMP1** 65, **S24** 431, **TFM1** 75; tree to 23 m tall; hill forest; Kd, Pn, Pk, Ph, NS.

48.14.5 **Goniothalamus holttumii** J. Sinclair, **S24** 429, **TFM1** 75; tree to 10 m tall; montane forest; only known from Fraser's Hill, Ph; endemic.

48.14.6 **Goniothalamus macranii** Craib, **S24** 429, **TFM1** 75; tree to 7 m tall; lowland forest; Ph, Sl, Jh.

48.14.7 **Goniothalamus macrophyllus** (Blume) Hook.*f.* & Thomson, **FMP1** 66, **S24** 446, **TFM1** 76; shrub to 5 m tall; common in lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.14.8 **Goniothalamus malayanus** Hook.*f.* & Thomson, **FMP1** 66, **S24** 432, **TFM1** 75; tree to 16 m tall; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp.

48.14.9 **Goniothalamus montanus** J. Sinclair, **S24** 443, **TFM1** 76; shrub or tree to 7 m tall; montane forest; Ulu Brang, Tg, and Cameron Highlands, Ph; endemic.

48.14.10 **Goniothalamus ridleyi** King, **FMP1** 68, **S24** 437, **TFM1** 76; tree to 23 m tall; lowland to montane forest; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

48.14.11 **Goniothalamus rotundisepalus** M.R. Hend., **S24** 435, **TFM1** 75; shrub to 2 m tall; lowland and hill forest; Kl; endemic.

48.14.12 **Goniothalamus scortechinii** King, **FMP1** 67, **S24** 441, **TFM1** 76; tree to 7 m tall; hill forest; Pn, Kl, Pk, Ph, Sl.

48.14.13 **Goniothalamus subevenius** King, **FMP1** 64, **S24** 427, **TFM1** 75, **C13** 82; shrub or small tree; lowland forest, probably on limestone; Pk.

48.14.14 **Goniothalamus tapis** Miq., **FMP1** 67, **S24** 444, **TFM1** 76; tree to 10 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Jh, Sp.

48.14.15 **Goniothalamus tenuifolius** King, **FMP1** 64 incl. var. *arborescens* King, **S24** 434, **TFM1** 75; *Goniothalamus caudifolius* Ridl., **FMP1** 65; *Goniothalamus kunstleri* King, **FMP1** 67; tree to 7 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml; endemic.

48.14.16 **Goniothalamus tortilipetalus** M.R. Hend., **S24** 436, **TFM1** 76; tree to 6 m tall; lowland forest; Kl, Pk, Ph, Sl, Ml.

48.14.17 **Goniothalamus umbrosus** J. Sinclair, **S24** 445, **TFM1** 76; shrub to 3 m tall; lowland forest; Pn, Kl, Tg; endemic.

48.14.18 **Goniothalamus undulatus** Ridl., **S24** 434, **TFM1** 75; tree to 6 m tall; once from Bt Bayor, Kl.

48.14.19 **Goniothalamus uvarioides** King, **FMP1** 69, **S24** 442, **TFM1** 76; *Goniothalamus pendulifolius* Ridl., **FMP5** 287; shrub to 5 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl.

48.14.20 **Goniothalamus wrayi** King, **FMP1** 65, **S24** 438, **TFM1** 76; shrub to 4 m tall; hill forest; Pk, Sl.

48.15.1 **Marsypopetalum pallidum** (Blume) Kurz, **S24** 372, **TFM1** 77; shrub to 3 m tall; lowland forest; Ml, Jh.

48.16.1 **Meiogyne monosperma** (Hook.*f.* & Thomson) Heusden, **V07** 502; *Cananga monosperma* Hook.*f.* & Thomson, **FMP1** 44; *Oncodostigma monosperma* (Hook.*f.* & Thomson) J. Sinclair, **S24** 275, **TFM1** 82; tree to 20 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl, Ml, Jh.

48.16.2 **Meiogyne virgata** (Blume) Miq., **S24** 277, **TFM1** 77, **V07** 495; *Cyathocalyx virgatus* (Blume) King, **FMP1** 36; tree to 20 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

48.17.1 **Melodorum aberrans** (Maingay *ex* Hook.*f.* & Thomson) J. Sinclair, **S24** 369; *Sphaerocoryne aberrans* (Maingay *ex* Hook.*f.* & Thomson) Ridl., **FMP1** 61; climbing shrub; lowland forest; Pk, Ph, NS, ?Sp.

48.17.2 **Melodorum siamense** (Scheff.) Bân, **V11** 686; *Rauwenhoffia siamensis* Scheff., **FMP1** 89, **S24** 228; scandent shrub; lowland forest; Kl, Pk, Ph.

48.18.1 **Mezzettia parviflora** Becc., **V03** 222; *Mezzettia leptopoda* (Hook.*f.* & Thomson) Oliv., **FMP1** 100, **S24** 327, **TFM1** 78; *Mezzettia curtisii* King, **FMP1** 101, **S24** 330; *Mezzettia herveyana* Oliv., **FMP1** 101, **S24** 328, **TFM1** 78; tree to 40 m tall; lowland forest to 300 m; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.18.2 **Mezzettia umbellata** Becc., **TFM1** 79, **V03** 220; tree to 21 m tall; lowland forest; twice from Sl.

48.19.1 **Mezzettiopsis creaghii** Ridl., **K16** 71; *Orophea palawanensis* Elmer, **S24** 398, **TFM1** 83; tree to 16 m tall; lowland and hill forest; Ph, Ml.

48.20.1 **Miliusa amplexicaulis** Ridl., **FMP1** 97, **S24** 380, **TFM1** 79, **C14** 82; small tree; frequently on limestone; Kd, Kl, Pk; endemic.

48.20.2 **Miliusa longipes** King, **FMP1** 96, **S24** 379, **TFM1** 79; tree to 10 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Sp.

48.20.3 **Miliusa parviflora** Ridl., **FMP1** 97, **S24** 380, **TFM1** 79, **C14** 82; small tree; limestone; Ps, P. Langkawi; endemic.

48.21.1 **Mitrella kentii** (Blume) Miq., **S24** 365; *Melodorum elegans* Hook.*f.* & Thomson, **FMP1** 88; *Melodorum pisocarpum* Hook.*f.* & Thomson, **FMP1** 88; liana; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp.

48.22.1 **Mitrephora maingayi** Hook.*f.* & Thomson, **FMP1** 73, **S24** 464, **TFM1** 80; tree to 15 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh.

48.22.2 **Mitrephora vulpina** C.E.C. Fisch., **S24** 465, **TFM1** 80; tree to 20 m tall; hill forest; Pk, Sl.

48.23.1 **Monocarpia marginalis** (Scheff.) J. Sinclair, **S24** 273, **TFM1** 80; *Cyathocalyx maingayi* Hook.*f.* & Thomson, **FMP1** 37; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

48.24.1 **Neo-Uvaria acuminatissima** (Miq.) Airy Shaw, **S24** 422, **TFM1** 82; tree to 15 m tall; lowland forest; Pn, Ph, Sl.

48.24.2 **Neo-Uvaria foetida** (Maingay *ex* Hook.*f.* & Thomson) Airy Shaw, **S24** 422, **TFM1** 82; *Popowia foetida* Maingay *ex* Hook.*f.* & Thomson, **FMP1** 76; large tree; lowland forest; Tg, NS, Ml.

48.25.1 **Orophea chrysantha** P.J.A. Kessler, **K16** 35; tree, 12 m tall; hill forest at 350 m; only known from type, Sg Anak Ketil, Kl; endemic.

48.25.2 **Orophea cuneiformis** King, **FMP1** 72, **S24** 394, **TFM1** 83, **C14** 83; tree to 13 m tall; restricted to limestone; Pk.

48.25.3 **Orophea enterocarpa** Maingay *ex* Hook.*f.* & Thomson, **FMP1** 70, **S24** 392, **TFM1** 83, **K16** 44; tree to 9 m tall; lowland forest to 500 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

48.25.4 **Orophea fusca** Craib, **K16** 57; small tree to 4 m tall; once collected, location uncertain.

48.25.5 **Orophea hastata** King, **FMP1** 71, **S24** 397, **TFM1** 83, **K16** 68; tree to 13 m tall; lowland forest; Kl, Pk, Ph, Sl, ?Sp.

48.25.6 **Orophea hirsuta** King, **FMP1** 70, **S24** 395, **TFM1** 83, **K16** 61; tree to 4 m tall; limestone; Ps, Kd, Kl, Pk.

48.25.7 **Orophea maculata** Scort. *ex* King, **FMP1** 71, **S24** 393, **TFM1** 83, **K16** 38; tree to 10 m tall; usually on limestone; Ph, Pk, Sl; endemic.

48.25.8 **Orophea malayana** P.J.A. Kessler, **K18** 509; tree to 8 m tall; on limestone hills; Kl, Pk, Ph; endemic.

48.25.9 **Orophea polycarpa** A. DC., **S24** 395, **TFM1** 83, **K16** 58; *Orophea gracilis* King, **FMP1** 71; tree to 10 m tall; limestone; Ps, Kl, Pk, Ph.

48.26.1 **Phaeanthus crassipetalus** Becc., **S24** 376, **TFM1** 84; *Phaeanthus lucidus* Oliv., **FMP1** 96; small tree; lowland forest; Kd, Pn, Pk, Ph, Sl.

48.26.2 **Phaeanthus ophthalmicus** (Roxb. *ex* G. Don) J. Sinclair, **S24** 374, **TFM1** 84; *Phaeanthus nutans* Hook.*f.* & Thomson, **FMP1** 95; small shrub; lowland forest; Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.27.1 **Platymitra macrocarpa** Boerl., **K17** 475; *Platymitra siamensis* Craib, **S24** 400, **TFM1** 84; tree to 35 m tall; lowland forest; P. Langkawi, Kd, Pk, Sl, NS, Jh.

48.28.1 **Polyalthia angustissima** Ridl., **FMP1** 53, **S24** 286, **TFM1** 86; slender tree to 7 m tall; lowland forest; Jh, Sp; endemic.

48.28.2 **Polyalthia asteriella** Ridl., **FMP1** 53, **S24** 309, **TFM1** 87; *Polyalthia simiarum* (Hook.*f.* & Thomson) Hook.*f.* & Thomson var. *parvifolia* King, **FMP1** 61; tree to 12 m tall; lower montane forest; Kd, Pk.

48.28.3 **Polyalthia brunneifolia** J. Sinclair, **S24** 301, **TFM1** 86; shrub to 4 m tall; lowland and hill forest; Kl, Pk, Ph, Sl, NS, Jh; endemic.

48.28.4 **Polyalthia bullata** King, **FMP1** 55, **S24** 300, **TFM1** 86; shrub 2–3 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh.

48.28.5a **Polyalthia cauliflora** Hook.*f.* & Thomson var. **beccarii** (King) J. Sinclair, **S24** 294; *Polyalthia beccarii* King, **FMP1** 50; shrub or small tree; lowland forest; Tg, Ph, NS, Ml, Jh, Sp.

48.28.5b **Polyalthia cauliflora** Hook.*f.* & Thomson var. **cauliflora**, **FMP1** 51, **S24** 292, **TFM1** 86; shrub or small tree; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp.

48.28.5c **Polyalthia cauliflora** Hook.*f.* & Thomson var. **desmantha** (Hook.*f.* & Thomson) J. Sinclair, **S24** 295; *Polyalthia desmantha* (Hook.*f.* & Thomson) Ridl., **FMP1** 49; shrub or small tree; lowland forest; Pn, Pk, Ph, NS, Ml, Jh.

48.28.5d **Polyalthia cauliflora** Hook.*f.* & Thomson var. **wrayi** (Hemsl.) J. Sinclair, **S24** 296; *Polyalthia wrayi* (Hemsl.) Ridl., **FMP1** 49; small tree; lowland forest; Pk; endemic variety.

48.28.6 **Polyalthia cinnamomea** Hook.*f.* & Thomson, **FMP1** 51, **S24** 286, **TFM1** 87; *Polyalthia velutinosa* Ridl., **FMP1** 56; tree to 20 m tall; lowland forest; Ps, Kd, Pn, Kl, Tg, Ph, Sl, NS, Ml, Jh.

48.28.7 **Polyalthia chrysotricha** Ridl., **FMP1** 57, **S24** 302, **TFM1** 86; tree to 10 m tall; lowland and hill forest; Ph, Sl; endemic.

48.28.8 **Polyalthia clavigera** King, **S24** 318, **TFM1** 87; *Polyalthia glomerata* King, **FMP1** 59; tree to 15 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, NS, Sp.

48.28.9 **Polyalthia dumosa** King, **FMP1** 54, **S24** 297, **TFM1** 86; shrub; montane forest; Tg, Pk; endemic.

48.28.10 **Polyalthia glabra** (Hook.*f.* & Thomson) J. Sinclair, **S24** 315, **TFM1** 87; *Polyalthia curtisii* Ridl., **FMP1** 59; tree to 13 m tall; lowland forest; once each from Pn and Ml; endemic.

48.28.11 **Polyalthia glauca** (Hassk.) F. Muell., **S24** 321, **TFM1** 88, **R27** 209; tree to 45 m tall; swampy lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.

48.28.12 **Polyalthia hirtifolia** J. Sinclair, **S24** 300, **TFM1** 86; *Polyalthia hirta* [*non* (Miq.) Diels] Ridl., **FMP1** 54; small tree; lowland forest; only known from type, Pn; endemic.

48.28.13 **Polyalthia hookeriana** King, **FMP1** 58, **S24** 312, **TFM1** 87; tree to 25 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Jh, Sp; endemic.

48.28.14 **Polyalthia hypogaea** King, **FMP1** 61, **S24** 315, **TFM1** 87; tree to 30 m tall; hill forest; Kd, Tg, Pk, Ph, Sl, NS, Jh; endemic.

48.28.15 **Polyalthia hypoleuca** Hook.*f.* & Thomson, **FMP1** 53, **S24** 320, **TFM1** 88, **R27** 227; tree to 30 m tall; lowland forest and peat swamps; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.28.16 **Polyalthia jenkensii** (Hook.*f.* & Thomson) Hook.*f.* & Thomson, **S24** 305, **TFM1** 88; tree to 20 m tall; lowland forest; P. Langkawi, Pn, Pk, Ph, Ml, Sp.

48.28.17 **Polyalthia lateriflora** (Blume) King, **FMP1** 59, **S24** 310, **TFM1** 88; tree to 20 m tall; lowland to lower montane forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.28.18 **Polyalthia lateritia** J. Sinclair, **S24** 290, **TFM1** 86; shrub or tree to 13 m tall; lowland forest; Kl, Pk, Ph, Ml; endemic.

48.28.19 **Polyalthia macropoda** King, **FMP1** 60, **S24** 316, **TFM1** 87; tree to 15 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, Jh, Sp; endemic.

48.28.20a **Polyalthia motleyana** (Hook.*f.*) Airy Shaw var. **glabrescens** Airy Shaw, **S24** 305; *Polyalthia oblonga* King, **FMP1** 57 in part; small tree to 4 m tall; lowland to lower montane forest; Pn, Sl, Jh.

48.28.20b **Polyalthia motleyana** (Hook.*f.*) Airy Shaw var. **motleyana**, **S24** 303; small tree to 4 m tall; hill forest; once from Gg Bintang, Kd.

48.28.20c **Polyalthia motleyana** (Hook.*f.*) Airy Shaw var. **oblonga** (King) J. Sinclair, **S24** 304; *Polyalthia oblonga* King, **FMP1** 57 in part; small tree to 4 m tall; lowland to lower montane forest; Pk, Sl.

48.28.21 **Polyalthia obliqua** Hook.*f.* & Thomson, **FMP1** 55, **S24** 290, **TFM1** 86; slender tree to 10 m tall; lowland and hill forest, also limestone; Kl, Ph, Sl, NS, Ml.

48.28.22 **Polyalthia pachyphylla** King, **FMP1** 59, **S24** 308, **TFM1** 87; tree to 30 m tall; only known from Larut, Pk, endemic.

48.28.23 **Polyalthia parviflora** Ridl., **FMP1** 54 in part, **S24** 299, **TFM1** 86; small tree; lowland forest; Ps, P. Langkawi.

48.28.24 **Polyalthia pumila** Ridl., **FMP1** 53, **S24** 289, **TFM1** 86; shrub to 1 m tall; hill forest; Pk, Jh; endemic.

48.28.25 **Polyalthia rumphii** (Blume) Merr., **S24** 306, **TFM1** 89; *Polyalthia kunstleri* King; **FMP1** 55; *Polyalthia canangioides* (Miq.) Boerl., **FMP1** 56; *Polyalthia scortechinii* King, **FMP1** 56; tree to 15 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.28.26 **Polyalthia sclerophylla** Hook.*f.* & Thomson, **FMP1** 58, **S24** 311, **TFM1** 87; tree to 16 m tall; lowland forest; Pk, Ph, NS, Ml, Jh, Sp.

48.28.27 **Polyalthia stenopetala** (Hook.*f.* & Thomson) Ridl., **FMP1** 50, **S24** 285, **TFM1** 86; tree to 10 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

48.28.28 **Polyalthia suberosa** (Roxb.) Thwaites, **S24** 298, **TFM1** 86; shrub; lowland forest; once from Kl.

48.28.29 **Polyalthia sumatrana** (Miq.) Kurz, **FMP1** 52, **S24** 319, **TFM1** 91, **R25** 220; tree to 24 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

48.28.30 **Polyalthia sp. A**, **TFM1** 91; tree to 30 m tall; lowland forest; Ph, Sl, Jh; endemic.

48.28.31 **Polyalthia sp. B**, **TFM1** 91; tree to 25 m tall; lowland forest; Ph; endemic.

48.29.1 **Popowia fusca** King, **FMP1** 76, **S24** 471, **TFM1** 92; tree to 15 m tall; lowland forest; Pk, Ph, Sp; endemic.

48.29.2 **Popowia pauciflora** Maingay *ex* Hook.*f.* & Thomson, **FMP1** 75, **S24** 470, **TFM1** 92; tree, only known from type, Ml; endemic.

48.29.3 **Popowia perakensis** King, **FMP1** 76, **S24** 473, **TFM1** 92; shrub to 5 m tall; hill forest; Pk; endemic.

48.29.4 **Popowia pisocarpa** (Blume) Endl., **S24** 468, **TFM1** 91; *Popowia ramosissima* Hook.*f.* & Thomson, **FMP1** 75; tree to 7 m tall; lowland forest; common throughout.

48.29.5a **Popowia tomentosa** Maingay *ex* Hook.*f.* & Thomson var. **crinita** J. Sinclair, **S24** 475, **TFM1** 92; tree; lowland and hill forest; Tg, Pk, Sl, NS; endemic variety.

48.29.5b **Popowia tomentosa** Maingay *ex* Hook.*f.* & Thomson var. **tomentosa**, **FMP1** 77, **S24** 474, **TFM1** 92; tree; lowland and hill forest; Pn, Pk, Ml, Sp.

48.29.6 **Popowia velutina** King, **FMP1** 77, **S24** 472, **TFM1** 92; tree; lowland forest; only known from Gopeng, Pk; endemic.

48.30.1 **Pseuduvaria cerina** J. Sinclair, **S24** 419, **TFM1** 92; shrub; hill forest; once from Bukit Bauk, Tg; endemic.

48.30.2 **Pseuduvaria galatea** J. Sinclair, **S24** 414, **TFM1** 92; tree to 8 m tall; lowland forest; ?Ph, Jh; endemic.

48.30.3a **Pseuduvaria macrophylla** (Oliv.) Merr. var. **cymosa** J. Sinclair, **S24** 410; small tree; lowland and hill forest; Pk, Sl; endemic variety.

48.30.3b **Pseuduvaria macrophylla** (Oliv.) Merr. var. **macrophylla**, **S24** 408, **TFM1** 93; *Mitrephora macrophylla* Oliv., **FMP1** 74; small tree; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml.

48.30.3c **Pseuduvaria macrophylla** (Oliv.) Merr. var. **sessilicarpa** J. Sinclair, **S24** 412; small tree; lowland forest; Jh; endemic variety.

48.30.4 **Pseuduvaria monticola** J. Sinclair, **S24** 408, **TFM1** 93; tree to 5 m tall; montane forest; Ph, Sl.

48.30.5 **Pseuduvaria nervosa** J. Sinclair, **S24** 416, **TFM1** 93; tree; hill forest; once from Ulu Brang, Tg; endemic.

48.30.6 **Pseuduvaria rugosa** (Blume) Merr., **S24** 412, **TFM1** 92; tree to 7 m tall; lowland forest; Ps, Pn, Kl, Pk, Ph, Ml.

48.30.7a **Pseuduvaria setosa** (King) J. Sinclair var. **major** J. Sinclair, **S24** 406, **TFM1** 93; shrub to 3 m tall; lowland forest; only known from type, Tembeling, Ph; endemic variety.

48.30.7b **Pseuduvaria setosa** (King) J. Sinclair var. **setosa**, **S24** 405, **FMP1** 93; *Orophea setosa* King, **FMP1** 70; shrub to 3 m tall; lowland forest including limestone; Kd, Kl, Pk, Ph, Sl.

48.30.8 **Pseuduvaria taipingensis** J. Sinclair, **S24** 406, **TFM1** 93; small tree; hill forest; only known from Maxwell's Hill, Pk; endemic.

48.31.1 **Pyramidanthe prismatica** (Hook.*f.* & Thomson) J. Sinclair, **S24** 362; *Melodorum cylindricum* Hook.*f.* & Thomson, **FMP1** 84; *Melodorum prismaticum* Hook.*f.* & Thomson, **FMP1** 87; *Melodorum maingayi* Hook.*f.* & Thomson, **FMP1** 87; liana; lowland and hill forest; Kd, Pn, Pk, Ml, Sp.

48.32.1 **Sageraea elliptica** (A. DC.) Hook.*f.* & Thomson, **FMP1** 25, **S24** 181, **TFM1** 93; small tree; lowland forest; Kd, Pn, Tg, NS, Ml, Jh.

48.32.2 **Sageraea lanceolata** Miq., **FMP1** 25, **S24** 182, **TFM1** 93; small tree; lowland forest; Ph.

48.33.1 **Stelechocarpus burahol** Hook.*f.* & Thomson, **V08** 433; tree to 25 m tall; once from Jh.

48.33.2 **Stelechocarpus cauliflorus** (Scheff.) R.E. Fr., **S24** 183, **TFM1** 93, **V08** 435; *Stelechocarpus nitidus* King, **FMP1** 24; tree to 12 m tall; lowland forest; Ps, Pn, Kd, Tg, Pk, Ph, Sl, Jh.

48.34.1 **Trivalvaria macrophylla** (Blume) Miq., **S24** 196, **TFM1** 94; *Popowia nervifolia* Maingay *ex* Hook.*f*., **FMP1** 77; tree to 13 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph, Sl, Ml, Sp.

48.34.2 **Trivalvaria nervosa** (Hook.*f*. & Thomson) J. Sinclair, **S24** 197, **TFM1** 94; *Popowia nervosa* (Hook.*f*. & Thomson) Ridl., **FMP1** 78; tree to 13 m tall; lowland forest; Kd, Kl, Pk, Ph, Ml, Jh; endemic.

48.34.3 **Trivalvaria pumila** (King) J. Sinclair, **S24** 198, **TFM1** 74; *Popowia pumila* (King) Ridl., **FMP1** 78; shrub 2–3 m tall; lowland forest; Tg, Pk, Ph, Sl, Ml, Jh.

48.35.1 **Uvaria cordata** (Dunal) Alston, **S24** 207; *Uvaria macrophylla* Roxb., **FMP1** 30; woody climber; lowland forest; throughout.

48.35.2 **Uvaria curtisii** King, **FMP1** 32, **S24** 206; large woody climber; lowland forest; Pn, Pk, Ph, Jh, Sp; endemic.

48.35.3a **Uvaria grandiflora** Roxb. *ex* Hornem. var. **grandiflora**, **S24** 202; *Uvaria purpurea* Blume, **FMP1** 31; climbing; shrub; lowland forest; throughout.

48.35.3b **Uvaria grandiflora** Roxb. *ex* Hornem. var. **tuberculata** (King) J. Sinclair, **S24** 203; climbing shrub; lowland forest; Pk; endemic variety.

48.35.4 **Uvaria hirsuta** Jack, **FMP1** 31, **S24** 203; woody climber to 15 m high; lowland forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.35.5 **Uvaria javana** Dunal, **S24** 216; *Uvaria dulcis auct. non* Dunal, **FMP1** 30; large woody climber to 33 m high; lowland and hill forest; Pn, Pk, NS, Ml, Jh.

48.35.6 **Uvaria larep** Miq., **FMP1** 29; woody climber 7–14 m long; lowland forest; Pk.

48.35.7 **Uvaria leptopoda** (King) R.E. Fr., **S24** 212; *Uvariella leptopoda* (King) Ridl., **FMP1** 35; liana to 20 m or more high; lowland forest; Pk, Ml, Jh, Sp; endemic.

48.35.8 **Uvaria lobbiana** Hook.*f*. & Thomson, **FMP1** 30, **S24** 208; *Uvaria subrepanda* Wall., **FMP1** 34; large climber reaching 50 m or more; lowland forest; Pn, Pk, Ph, Sl, Ml, Sp.

48.35.9 **Uvaria pauci-ovulata** Hook.*f*. & Thomson, **FMP1** 32, **S24** 217; stout woody climber; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp; endemic.

48.35.10 **Uvaria rufa** Blume, **S24** 211; *Uvaria ridleyi* King, **FMP1** 32; *Uvaria astrosticta* Miq., **FMP1** 34; woody climber; lowland forest; Ps, Kd, Pn, Pk, Ph.

48.35.11 **Uvaria scortechinii** King, **FMP1** 33, **S24** 218; scrambling shrub; only known from type, Pk; endemic.

48.36.1 **Xylopia caudata** Hook.*f.* & Thomson, **FMP1** 93, **S24** 339, **TFM1** 95; tree to 16 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.36.2 **Xylopia elliptica** Maingay *ex* Hook.*f.* & Thomson, **FMP1** 92, **S24** 342, **TFM1** 95; tree to 20 m tall; lowland forest; Kd, Pn, Tg, Pk, Ml; endemic.

48.36.3a **Xylopia ferruginea** (Hook.*f.* & Thomson) Hook.*f.* & Thomson var. **ferruginea**, **FMP1** 93, **S24** 343, **TFM1** 95; tree to 20 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

48.36.3b **Xylopia ferruginea** (Hook.*f.* & Thomson) Hook.*f.* & Thomson var. **oxyantha** (Hook.*f.* & Thomson) J. Sinclair, **S24** 345, **TFM1** 96; *Xylopia oxyantha* Hook.*f.* & Thomson, **FMP1** 90; tree to 20 m tall; lowland forest; Ph, Sl, NS, Jh, Sp.

48.36.4a **Xylopia fusca** Maingay *ex* Hook.*f.* & Thomson var. **fusca**, **FMP1** 92, **S24** 337, **TFM1** 96; tree to 30 m tall; swampy lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

48.36.4b **Xylopia fusca** Maingay *ex* Hook.*f.* & Thomson var. **sessiliflora** Kochummen & Whitmore, **TFM1** 97; tree; dry lowland forest; Kd, NS, Jh; endemic variety.

48.36.5 **Xylopia magna** Maingay *ex* Hook.*f.* & Thomson, **FMP1** 93, **S24** 338, **TFM1** 97; tree to 20 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Sp; endemic.

48.36.6a **Xylopia malayana** Hook.*f.* & Thomson var. **malayana**, **FMP1** 91, **S24** 340, **TFM1** 98; *Xylopia pustulata* Hook.*f.* & Thomson, **FMP1** 91; tree to 20 m tall; lowland forest; Tg, Pk, Ph, Sl, Ml, Jh, Sp.

48.36.6b **Xylopia malayana** Hook.*f.* & Thomson var. **obscura** Kochummen, **TFM1** 98; tree; lowland forest; Tg, Ph, Jh; endemic variety.

48.36.7 **Xylopia stenopetala** Oliv., **FMP1** 92, **S24** 342, **TFM1** 98; tree to 20 m tall; hill forest; Pn, Ph, Sl.

48.36.8 **Xylopia subdehiscens** (King) J. Sinclair, **S24** 345, **TFM1** 95; *Alphonsea subdehiscens* King, **FMP1** 98; tree to 7 m tall; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, Jh; endemic.

49. APOCYNACEAE

49.1.1 **Aganosma marginata** (Roxb.) G.Don, **FMP2** 365, **M61** 469; climbing shrub; open country; widespread.

49.1.2 **Aganosma wallichii** G.Don, **M61** 478; *Aganosma calycina* A. DC., **FMP2** 365; immense climber; lowland forest; Pk, Sl, Jh.

49.2.1 **Alstonia angustifolia** Wall. *ex* A. DC., **FMP2** 348, **TFM2** 8 incl. var. *latifolia* King & Gamble, **M15** 26; *Alstonia latifolia* (King & Gamble) Ridl., **FMP2** 347; small tree about 10 m tall; often in seasonal swamps in the lowlands; Pn, Ph, Sl, Ml, Jh, Sp.

49.2.2 **Alstonia angustiloba** Miq., **FMP2** 347, **TFM2** 9, **M15** 24, **K57** 521; *Alstonia pneumatophora* Back. *ex* L.G. den Berger var. *petiolata* Monach., **TFM2** 11; big tree to 45 m tall, 3 m girth; lowlands and hills to 700 m; common throughout Malay Peninsula.

49.2.3 **Alstonia macrophylla** Wall. *ex* G. Don, **FMP2** 347, **TFM2** 9, **M15** 28; *Alstonia pangkorensis* King & Gamble, **FMP2** 348; tree to 30 m tall; mostly in hill forest; Kd, Kl, Tg, Pn, Pk, Sl.

49.2.4 **Alstonia pneumatophora** Back. *ex* L.G. den Berger, **TFM2** 11, **M15** 25; tree to 40 m; lowland swamps or hill forest; Pk, Ph, Sl, NS.

49.2.5 **Alstonia rostrata** C.E.C. Fisch., D.J. Middleton *pers. comm.*; *Alstonia undulifolia* Kochummen & K.M. Wong, **K57** 513; tree to 30 m; dipterocarp forest at 300–1000 m; Kd, Kl, Ph.

49.2.6a **Alstonia scholaris** (L.) R.Br. var. **scholaris**, **FMP2** 346, **TFM2** 11, **M15** 23; tree to over 36 m tall; lowlands to mountains at 1000 m, including secondary forest; Kd, Kl, Tg, Ph, Sl, Ml, Jh.

49.2.6b **Alstonia scholaris** (L.) R.Br. var. **velutina** Monach., **TFM2** 11, **M15** 24; hairy-leaved form; collected once, Tekal, Ph.

49.2.7 **Alstonia spatulata** Blume, **FMP2** 346, **TFM2** 12, **M15** 25; small tree; most frequently in wet lowland forests; Kl, Tg, Pk, Ph, Sl, Ml, Jh.

49.3.1 **Alyxia angustifolia** Ridl., **FMP2** 333, **M16** 385; shrub or climber; rocky slopes and ridges usually in mountains; Kl, Ph, Sl; endemic.

49.3.2a **Alyxia oleifolia** King & Gamble var. **oleifolia**, **FMP2** 333, **M16** 384; liana; montane forest at 1100–2000 m; Pk, Ph, Sl.

49.3.2b **Alyxia oleifolia** King & Gamble var. **tenuifolia** Ridl., **FMP2** 333, **M16** 385; liana; montane forest at 1500–2000 m; Ph, Sl.

49.3.3 **Alyxia pilosa** Miq., **FMP2** 332, **M16** 382; climber; lowland and montane forest; Pk, Ph, Sl, Ml, Jh, Sp.

49.3.4a **Alyxia reinwardtii** Blume var. **insularis** Markgr., **M16** 387; scandent shrub; Pk, Ml, Jh; endemic variety.

49.3.4b **Alyxia reinwardtii** Blume var. **lucida** (Wall.) Markgr., **M16** 389; *Alyxia lucida* Wall.; **FMP2** 332; slender climber; often coastal; Kd, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

49.3.4c **Alyxia reinwardtii** Blume var. **meiantha** (Stapf) Markgr., **M16** 389; *Alyxia forbesii* King & Gamble, **FMP2** 334; slender climber; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

49.3.4d **Alyxia reinwardtii** Blume var. **pumila** (Hook.*f*) Markgr., **M16** 388; *Alyxia pumila* Hook.*f*., **FMP2** 333; slender climber; hills and mountains; Kd, Ph, Ml.

49.3.4e **Alyxia reinwardtii** Blume var. **reinwardtii**, **M16** 388; slender climber; Ph, Jh.

49.3.5 **Alyxia schlechteri** Lév., D.J. Middleton *pers. comm.*; *Alyxia calcicola* Markgr., **M16** 405; scandent shrub; limestone hills; Kl, Ph, Sl.

49.3.6 **Alyxia scortechinii** King & Gamble, **FMP2** 334, **M16** 394; *Alyxia selangorica* King & Gamble, **FMP2** 334; liana; lowland and montane forest; Pk, Ph, Sl.

49.4.1 **Anodendron axillare** Merr., **M39** 42; climber; once from Sg Krian, Pk.

49.4.2 **Anodendron candolleanum** Wight, **FMP2** 362, **M39** 47; liana; lowland forest; P. Langkawi, Pn, Pk, Sl, Ml.

49.4.3 **Anodendron coriaceum** (Blume) Miq., **M39** 48; climber; Pk.

49.4.4 **Anodendron gracile** (King & Gamble) D.J. Middleton, **M39** 50, *Cleghornia gracilis* King & Gamble, **FMP2** 363, **X01** 20; liana; hill forest at 1000–1300 m; Kl, Pk, Ph.

49.4.5 **Anodendron lanceolatum** King & Gamble, **FMP2** 362, **M39** 64; climber; Tapah, Pk.

49.4.6 **Anodendron paniculatum** A. DC., **FMP2** 361, **M39** 54; robust climber; open areas; Ps, Pn.

49.4.7 **Anodendron pauciflorum** Hook.*f*., **FMP2** 362, **M39** 58; climber; hill forest; Pn, Pk.

49.4.8 **Anodendron tubulosum** (Ridl.) D.J. Middleton, **M38** 89, **M39** 61; *Micrechites tubulosa* Ridl., **FMP5** 321; climber; montane forest; Pk, Sl.

49.4.9 **Anodendron wrayi** King & Gamble, **FMP2** 362, **M39** 63; *Trachelospermum obtusifolium* Ridl., **FMP5** 321, **W34** 96; liana; lower montane forest at 1200–1600 m; Pk, Ph; endemic.

49.5.1 **Beaumontia multiflora** Teijsm. & Binn., **R33** 27; large woody climber; only known from Batu Caves, Sl.

49.5.2 **Beaumontia murtonii** Craib, **R33** 31; large woody climber; collected once at Genting Simpah, Sl.

49.6.1 **Catharanthus roseus** (L.) G. Don; **M13** 150, **P20** 3; *Lochnera rosea* (L.) Rchb. *ex* Endl., **FMP2** 340; herb; seashores and waste sandy places; widespread; naturalized from Madagascar.

49.7.1 **Cerbera manghas** L., **TFM2** 12; *Cerbera lactaria* Buch.-Ham. *ex* D. Dietr., **FMP2** 339; small tree; rocky and sandy coasts; widespread.

49.7.2 **Cerbera odollam** Gaertn., **FMP2** 339, **TFM2** 12; small tree; mangrove swamps and muddy coasts; widespread.

49.8.1 **Chilocarpus costatus** Miq., **FMP2** 326, **M13** 161; stout liana; lowland and hill forest to 1000 m; Tg, Pn, Pk, Ph, Sl, Ml, Jh.

49.8.2 **Chilocarpus decipiens** Hook.*f.*, **FMP2** 327, **M13** 164; slender liana; lowland forest; Pk, Ph, Sl, NS, Ml, Jh.

49.8.3 **Chilocarpus denudatus** Blume, **M13** 164; *Chilocarpus atroviridis* Blume, **FMP2** 327; slender climber; forest to 1000 m; Pk, Sl, Ml.

49.8.4 **Chilocarpus embelioides** King & Gamble, **FMP2** 327, **M13** 162; scandent shrub; Tg, Pk.

49.8.5 **Chilocarpus minutiflorus** King & Gamble, **FMP2** 328, **M13** 164; climber; Pk.

49.8.6 **Chilocarpus nigrescens** King & Gamble, **FMP2** 328, **M13** 161; liana; only known from Penang Hill; endemic.

49.8.7 **Chilocarpus obtusifolius** Merr., **M13** 163; climber; peat swamp forest; Jh.

49.8.8 **Chilocarpus tuberculatus** Markgr., **M13** 164; scandent shrub; Pk.

49.8.9 **Chilocarpus vernicosus** Blume, **M13** 161; *Chilocarpus cantleyi* King & Gamble, **FMP2** 328; *Chilocarpus enervis* Hook.*f.*, **FMP2** 327; liana; lowland and hill forest, including swamps; Pk, Sl, Ml, Jh, Sp.

49.9.1 **Chonemorpha fragrans** (Moon) Alston, **R04** 36; *Chonemorpha macrophylla* (Roxb.) G. Don, **C05** 49; stout liana; lowland forest to 200 m; Pk.

49.9.2 **Chonemorpha penangensis** Ridl., **FMP2** 360, **C05** 51, **R04** 44; liana; lowlands to 300 m; Pn, Pk, Ph, Ml; endemic.

49.9.3 **Chonemorpha verrucosa** (Blume) D.J. Middleton, **M35** 455; *Rhynchodia wallichii* (DC.) Benth., **FMP2** 361, **TFM2** 6; liana; lowland forest; P. Langkawi, Pk, Ph.

49.10.1 **Cleghornia malaccensis** (Hook.*f.*) King & Gamble, **FMP2** 363, **X01** 21; forest liana; Pk, Sl, Ml.

49.11.1 **Dyera costulata** (Miq.) Hook.*f.*, **FMP2** 345, **M54** 190, **TFM2** 13; *Dyera laxiflora* Hook.*f.*, **FMP2** 345; huge lactiferous tree to more than 60 m; lowland forests, sometimes swamps; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

49.12.1 **Epigynum auritum** (C.K. Schneid.) Tsiang & P.T. Li, D.J. Middleton *pers. comm.*; *Trachelospermum curtisii* King & Gamble, **FMP2** 366, **W34** 73; liana; Pn, Pk.

49.12.2 **Epigynum curtisii** King & Gamble, **FMP2** 367; climber; hill forest; Penang Hill; endemic.

49.12.3 **Epigynum griffithianum** Wight, D.J. Middleton *pers. comm.*; *Epigynum perakense* King & Gamble, **FMP2** 366; climber; lowland forest; Kd, Pk.

49.12.4 **Epigynum maingayi** Hook.*f.*, **FMP2** 367; climber; open forest; Pk, Ph, Sl, NS, Ml; endemic.

49.12.5 **Epigynum ridleyi** King & Gamble, **FMP2** 367; slender climber; lowland forest; Sl; endemic.

49.13.1 **Holarrhena curtisii** King & Gamble, **TFM2** 4, **D10** 6; *Holarrhena pulcherrima* Ridl., **FMP2** 349; *Holarrhena densiflora* Ridl., **FMP2** 349; shrub to 2.5 m; lowland forest to 400 m; Ps, Kd.

49.14.1 **Hunteria zeylanica** (Retz.) Gardn. *ex* Thwaites, **TFM2** 16, **M19** 169; *Hunteria corymbosa* Roxb., **FMP2** 335; small tree to 15 m tall; lowlands and hills to 540 m; Kd, Tg, Pk, Ph, Sl, NS.

49.15.1 **Ichnocarpus frutescens** (L.) W.T. Aiton, **FMP2** 364, **M38** 77; *Ichnocarpus ovatifolius* A. DC., **FMP2** 364; straggling climber to 20 m; forests, often near river banks.

49.15.2 **Ichnocarpus polyanthus** (Blume) P.I. Forst., **M38** 82; *Micrechites scortechinii* (King & Gamble) Ridl., **FMP2** 368; climber; Kd.

49.15.3 **Ichnocarpus serpyllifolius** (Blume) P.I. Forst., **M38** 85; *Micrechites brachypetala* Ridl., **FMP2** 368; *Micrechites furcata* Ridl., **FMP2** 368; *Micrechites tenuifolia* Ridl., **FMP2** 369; liana or creeper; lowland forest; widespread.

49.16.1 **Kibatalia arborea** (Blume) G. Don, **TFM2** 18, **R33** 43; tree to 36 m; lowland and hill forest to 600 m; Ph, Sl.

49.16.2 **Kibatalia laurifolia** (Ridl.) Woodson, **R33** 60; small tree to 20 m; once collected, Pk.

49.16.3 **Kibatalia maingayi** (Hook.*f.*) Woodson, **TFM2** 18, **R33** 69; *Vallaris maingayi* Hook.*f.*, **FMP2** 351; tree to 27 m; lowland forests; Pn, Pk, Ph, Sl, NS, Ml, Jh.

49.16.4 **Kibatalia villosa** Rudjiman, **R33** 82; tree to 30 m; once collected, Rengam F. R., Jh.

49.17.1 **Kopsia alba** Ridl. *ex* M.R. Hend., **H34** 78; shrub to 5 m tall; rocky forest, once from limestone; Kl and P. Tioman, Ph; endemic.

49.17.2 **Kopsia deverrei** L. Allorge, **A10** 93; small tree to 8 m; lowland and hill forest; Jh; endemic.

49.17.3 **Kopsia fruticosa** (Ker Gawl.) A. DC., **M14** 422; possibly native, widely cultivated.

49.17.4 **Kopsia griffithii** King & Gamble, **FMP2** 337 incl. var. *paucinervia* King & Gamble, **TFM2** 19, **M12** 421; shrub or small tree; lowlands to 1000 m; Pk, Sl, NS, Ml, Jh.

49.17.5 **Kopsia lapidilecta** Sleesen, **V16** 137, **M14** 423; shrub or small tree; once collected, Jh.

49.17.6 **Kopsia larutensis** King & Gamble, **FMP2** 337, **TFM2** 19, **M14** 423; shrub or small tree to 8 m; Kd, Kl, Pk.

49.17.7 **Kopsia macrophylla** Hook.*f.*, **FMP2** 338, **TFM2** 19, **M14** 423; *Kopsia ridleyana* King & Gamble, **FMP2** 338; small tree to 6 m; Kl, Tg, Pk, Ph, NS, Ml, Jh; endemic.

49.17.8 **Kopsia majumdarii** M. G. Gangop. & Chakrab., **G04** 59; small tree to 9 m tall; lowland forest; Pk, only known from type; endemic.

49.17.9 **Kopsia pauciflora** Hook.*f.*, **FMP2** 337, **TFM2** 19, **M14** 422; shrub or small tree to 7 m; Kl, Tg, Pk, Ph, Sl, NS, Ml.

49.17.10 **Kopsia profunda** Markgr., **M14** 424; *Kopsia mitrephora* Sleesen, **TFM2** 19 (Malayan plants only); shrub or small tree; known only from Tg; endemic.

49.17.11 **Kopsia scortechinii** King & Gamble, **FMP2** 337, **TFM2** 20, **M14** 421; small tree to 15 m; Gg Bujang Melaka, Pk.

49.17.12 **Kopsia singapurensis** Ridl., **FMP2** 336, **TFM2** 19, **M14** 421; small tree to 5 m; common in lowland swamp forest; Pk, Ph, Sl, NS, Jh, Sp.

49.17.13 **Kopsia teoi** L. Allorge, **A09** 97; shrub to 4 m tall; lowland forest; Jh; endemic.

49.17.14 **Kopsia terengganensis** L. Allorge & C. Wiart, **A11** 434; shrub 1.5–3 m tall; only known from type, Dungun, Tg; endemic.

49.18.1 **Leuconotis eugeniifolia** A. DC., **FMP2** 329, **M13** 155; climber; lowland forest margins; Pn southward.

49.18.2 **Leuconotis griffithii** Hook.*f.*, **FMP2** 329, **M13** 156; forest climber; Kl southward; endemic.

49.18.3 **Leuconotis maingayi** Dyer *ex* Hook.*f.*, **FMP2** 329, **M13** 156; climber; lowland forest margins; Pk southward; endemic.

49.19.1 **Melodinus coriaceus** Oliv., **FMP2** 331, **M13** 153; big climber; hill forests; Pn, Pk, Ml.

49.19.2 **Melodinus micranthus** Hook.*f.*, **FMP2** 331, **M13** 154; lowland forest climber; Pn, NS, Ml, Jh, Sp.

49.19.3 **Melodinus monogynus** Roxb., **FMP2** 330, **M13** 152; large climber, beautiful fragrant plant; hill forest; Pn, Pk.

49.19.4 **Melodinus orientalis** Blume, **FMP2** 330, **M13** 154; *Melodinus citriformis* King & Gamble, **FMP2** 331; large climber; hill forests; Kl, Pn, Pk, Ph, Jh.

49.19.5 **Melodinus perakensis** King & Gamble, **FMP2** 331, **M13** 153; climber; on limestone hills 100–300 m; Pk; endemic.

49.20.1 **Neisosperma oppositifolium** (Lam.) Fosberg & Sachet, **M17** 243; *Ochrosia borbonica auct. non* Gmel., **FMP2** 340; *Ochrosia oppositifolia* (Lam.) K. Schum., **TFM2** 20; small tree to 10 m; on rocky and sandy shores; Pk, Jh, Sp.

49.21.1 **Parameria densiflora** Oliv., **FMP2** 359, **M40** 75; climber; hill forest; Penang Hill.

49.21.2 **Parameria laevigata** (A.L. Juss.) Moldenke, **B03** 234; *Parameria glandulifera* (Wall. *ex* G. Don) Benth. *ex* Kurz, **FMP2** 358; large climber; lowland forest; Pn, Pk, Ph, Sl, NS, Ml, Sp.

49.21.3 **Parameria polyneura** Hook.*f.*, **FMP2** 359, **M40** 80; climber; lowland forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

49.22.1 **Parsonsia alboflavescens** (Dennst.) Mabb., **M02** 532; *Parsonsia spiralis* Wall. *ex* G. Don, **FMP2** 350; *Parsonsia helicandra* Hook. & Arn., **TFM2** 6; vine; climbing on bushes, often near the sea; widespread.

49.22.2 **Parsonsia kunstleri** King & Gamble, **FMP2** 350; vine; Chandering, Pk; endemic.

49.22.3 **Parsonsia penangiana** King & Gamble, **FMP2** 351; *Artia penangiana* (King & Gamble) Pichon, **TFM2** 6; vine; Pn.

49.22.4 **Parsonsia stenocarpa** King & Gamble, **FMP2** 351; vine; lowland forests; Gopeng, Pk; endemic.

49.23.1 **Pottsia laxiflora** (Blume) Kuntze, **TFM2** 6; *Pottsia cantoniensis* Hook. & Arn., **FMP2** 352; large climber; Pn, Pk, Ml.

49.24.1 **Rauvolfia sumatrana** Jack, **FMP2** 336, **M18** 166; *Rauvolfia reflexa* Teijsm. & Binn., **TFM2** 21; tree up to 20 m; lowland forest; Pk.

49.24.2 **Rauvolfia verticillata** (Lour.) Baill., **TFM2** 21, **M18**; 160; *Rauvolfia perakensis* King & Gamble, **FMP2** 335; shrub 2–3 m tall; lowlands, hills and mountains; Kd, Kl, Pk, Ph, Sl.

49.25.1 **Spirolobium cambodianum** Baill., **TFM2** 5; *Holarrhena pauciflora* Ridl., **FMP2** 349; small shrub; open sandy places; Ps, P. Langkawi, Ph.

49.26.1 **Strophanthus caudatus** (L.) Kurz, **B16** 54; *Strophanthus dichotamus* DC., **FMP2** 354; shrub or climber; forest margins to 900 m; Pk, Sl, Ml, Jh, Sp.

49.26.2 **Strophanthus perakensis** Scort. *ex* King & Gamble, **FMP2** 355, **B16** 119; climber; type only Malayan collection; Dipang, Pk.

49.26.3 **Strophanthus singaporianus** (Wall. *ex* G. Don) Gilg, **B16** 139; *Strophanthus brevicaudatus* Wight, **FMP2** 356; shrub or climber; Ml, Sp.

49.26.4 **Strophanthus wallichii** A. DC., **FMP2** 355, **B16** 151; shrub or climber; lowland forest; Ps, P. Langkawi.

49.27.1 **Tabernaemontana corymbosa** Roxb. *ex* Wall., **TFM2** 23, **L17** 138; *Ervatamia corymbosa* (Roxb. *ex* Wall.) King & Gamble, **FMP2** 341 incl. var. *pubescens* King & Gamble; *Tabernaemontana hirta* Hook.*f*., **TFM2** 23; *Ervatamia hirta* (Hook.*f*.) King & Gamble, **FMP2** 342; *Ervatamia pauciflora auct. non* Blume, **FMP2** 342 incl. var. *minor* Ridl.; *Ervatamia jasminiflora* Ridl., **FMP2** 342, **TFM2** 23; shrub or small tree to 10 m; lowland and hill forest to 900 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

49.27.2 **Tabernaemontana crispa** Roxb. *ex* Wall., **L17** 145; *Ervatamia corymbosa* var. *kelsallii* King & Gamble, **FMP2** 342; *Ervatamia curtisii* King & Gamble, **FMP2** 344, **TFM2** 23; *Ervatamia cylindricocarpa* King & Gamble, **FMP2** 344; *Tabernaemontana cylindricocarpa* (King & Gamble) Merr., **TFM2** 23; small shrub to 2 m, lowland and hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh.

49.27.3 **Tabernaemontana dichotoma** Roxb. *ex* Wall., **L17** 149; *Ervatamia polyneura* King & Gamble, **FMP2** 341; *Tabernaemontana polyneura sensu* Whitmore, **TFM2** 23; shrub or small tree to 12 m; in montane forest at 750–1500 m; Kl, Pk, Ph, Sl, Ml.

49.27.4 **Tabernaemontana divaricata** (L.) R.Br. *ex* Roem. & Schult., **L17** 153; *Ervatamia coronaria* (Jacq.) Stapf, **FMP2** 342; shrub to 2 m; possibly only a garden escape.

49.27.5 **Tabernaemontana macrocarpa** Jack, **L17** 165; *Tabernaemontana sphaerocarpa auct. non* Blume, **TFM2** 23; small tree to 25 m tall; understorey of lowland forest; to 1000 m; Kd, Jh.

49.27.6 **Tabernaemontana pauciflora** Blume, **L17** 182; *Tabernaemontana malaccensis* Hook.*f*., **TFM2** 23; *Ervatamia malaccensis* (Hook.*f*.) King & Gamble, **FMP2** 343; shrub to 2 m; lowland forest to 600 m, often on streambanks; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

49.27.7 **Tabernaemontana peduncularis** Wall., **TFM2** 23, **L17** 187; *Ervatamia peduncularis* (Wall.) King & Gamble, **FMP2** 343; shrub to 5 m; forest understorey to 1700 m; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.

49.28.1 **Urceola brachysepala** Hook.*f*., **FMP2** 357, **M40** 84; *Urceola maingayi* Hook.*f*., **FMP2** 357; big climber; lowland and hill forest to 1000m; Pn, Pk, Ph, Sl, Ml, Jh, Sp.

49.28.2 **Urceola elastica** Roxb., **FMP2** 356, **M40** 86; stout climber; lowland forest; Pn, Kl, Pk, Sl, NS, Ml.

49.28.3 **Urceola lucida** (Wall. *ex* G. Don) Benth. *ex* Kurz, **FMP2** 358, **M40** 94; stout climber; lowland and hill forest to 950 m; P. Langkawi,Pn, Pk, Ml, Sp.

49.28.4 **Urceola maingayi** D.J. Middleton, **M40** 95; climber; twice from Ph; endemic.

49.28.5 **Urceola micrantha** (Wall. *ex* G. Don) D.J. Middleton, **M36** 762, **M40** 97; *Ecdysanthera micrantha* (Wall. *ex* G. Don) Hook.*f*., **FMP2** 360; *Ecdysanthera multiflora* King & Gamble, **FMP2** 360; *Urceola montana* M.R. Hend., **H35** 108; large climbing shrub; lowland and hill forest to 1500 m; once each from Pk, Ph and Sl.

49.28.6 **Urceola rosea** (Hook. & Arn.) D.J. Middleton, **M37** 765, **M40** 94; *Ecdysanthera rosea* Hook. & Arn., **FMP5** 320; slender climber; lowland and hill forest; Ps, Pk, Ph, Sl.

49.28.7 **Urceola torulosa** Hook.*f*., **FMP2** 358, **M40** 110; *Urceola malaccensis* Hook.*f*., **FMP2** 357; climber; lowland forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

49.29.1 **Vallariopsis lancifolia** (Hook.*f*.) Woodson, **TFM2** 4, **R33** 89; *Vallaris lancifolia* Hook.*f*., **FMP2** 352; climber; swamp forest; Pn, Kl, Pk, Sl, Ml.

49.30.1 **Willughbeia angustifolia** (Miq.) Markgr., **M14** 414, **M36** 4; *Willughbeia flavescens* Dyer *ex* Hook.*f*. var. *rufescens* Ridl., **FMP2** 325; *Urnularia rufescens* (Dyer *ex* Hook.*f*.) Stapf *ex* S. Moore, **M12** 409; large liana reaching 60 m in length; lowland forest; Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.

49.30.2 **Willughbeia edulis** Roxb., **FMP2** 323, **M36** 11; *Willughbeia coriacea* Wall., **FMP2** 323, **M14** 412; *Willughbeia firma* Blume, **FMP2** 323; *Willughbeia dulcis* Ridl., **FMP2** 325, **M14** 414; stout liana to 30 m long; lowland forests; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

49.30.3 **Willughbeia flavescens** Dyer *ex* Hook.*f*., **FMP2** 325, **M36** 12; *Urnularia flavescens* (Dyer *ex* Hook.*f*.) Stapf, **M14** 409; *Melodinus cymosus* Ridl., **FMP2** 331; liana to 30 m long; lowland forest; Pn, Pk, Ph, Sl, Ml, Jh, Sp.

49.30.4 **Willughbeia grandiflora** Dyer *ex* Hook.*f*., **FMP2** 322, **M14** 411, **M36** 14; stout liana; lowland swamp forest; Sl, Jh, ?Sp.

49.30.5 **Willughbeia oblonga** Dyer *ex* Hook.*f*., **FMP2** 323, **M14** 411, **M36** 16; liana; lowland forest; ?Kd, Sl, Ml, Jh; endemic.

49.30.6 **Willughbeia tenuiflora** Dyer *ex* Hook.*f*., **FMP2** 325, **M14** 412, **M36** 18; big liana; lowland forests; Kd, Kl, ?Pn, Pk, Sl, NS, Ml, Jh, Sp.

49.31.1 **Wrightia dubia** (Sims) Spreng., **N03** 172, **TFM2** 24; *Strophanthus jackianus* Wall. *ex* G.Don, **FMP2** 355; shrub to 3 m; Kd, Pn, Ph.

49.31.2a **Wrightia laevis** Hook.*f*. ssp. **laevis**, **FMP2** 353, **N03** 137, **TFM2** 24; small tree to 15 m; hill forest; Kl, Pk, Ph, Sl, NS, Jh, Sp.

49.31.2b **Wrightia pubescens** R.Br. ssp. **laniti** (Blanco) Ngan, **N03** 153, **TFM2** 23; *Wrightia javanica* A. DC., **FMP2** 353; small tree to 7 m; Ps, Kd, Tg, Pn, Pk.

49.31.3 **Wrightia religiosa** (Teijsm. & Binn.) Benth., **FMP2** 353, **N03** 159, **TFM2** 24; shrub to 2 m; P. Langkawi, Ps; often cultivated elsewhere.

50. AQUIFOLIACEAE

50.1.1 **Ilex baasiana** B.C. Stone & Kiew, **S67** 195; epiphytic shrub with tuberous roots; montane forest at about 1500 m; Gg Ulu Kali, Ph; endemic.

50.1.2 **Ilex cymosa** Blume, **FMP1** 442, **TFM3** 3; tree; lowland forest including swamps and secondary forest; widespread.

50.1.3 **Ilex epiphytica** King, **FMP1** 439, **TFM3** 5; small tree or shrubby epiphyte; montane forest; widespread in the mountains; endemic.

50.1.4 **Ilex glomerata** King, **FMP1** 439, **TFM3** 5; shrub or small tree; montane forest; Tg, Pk.

50.1.5 **Ilex grandiflora** Ridl., **FMP1** 439, **TFM3** 5; shrub or small tree; high montane forest; Pk, Ph, Jh; endemic.

50.1.6 **Ilex illustris** Ridl., **FMP1** 439, **TFM3** 8; shrub or small tree; montane forest, occasionally in the lowlands; Tg, Pk, Ph; endemic.

50.1.7 **Ilex kelsallii** Ridl., **FMP5** 298, **TFM3** 2; small tree; montane forest; ?Pk, Ph.

50.1.8 **Ilex macrophylla** Hook.*f*., **FMP1** 442, **TFM3** 8; *Ilex venulosa* var. *nervulosa* Loes., **FMP1** 442; smallish tree; lowland well-drained forest; widespread. S. Andrews informs me that *Ilex venulosa* var. *nervulosa* should probably be recognized as a distinct species.

50.1.9 **Ilex maingayi** Hook.*f.*, **FMP1** 440, **TFM3** 8; small to medium-sized tree; swampy lowland rain forest, humose soils on limestone; south and west of Malaya; endemic.

50.1.10 **Ilex malaccensis** Loes., **FMP1** 437, **TFM3** 8; shrub, small tree or woody climber; lowland forest, more frequently in the mountains; widespread.

50.1.11 **Ilex micrococca** Maxim., **TFM3** 2; small spreading tree; montane forest; once at Fraser's Hill, Ph.

50.1.12 **Ilex myrtillis** Ridl., **FMP1** 438, **TFM3** 2; much-branched shrub; montane forest; Ph, Sl; endemic.

50.1.13 **Ilex patens** Ridl., **FMP1** 440, **TFM3** 3; small tree; montane forest; Kd, Ph, Sl; endemic.

50.1.14 **Ilex pauciflora** Ridl., **FMP1** 441, **TFM3** 3; small tree; only known from Penang Hill; endemic.

50.1.15 **Ilex polyneura** (Hand.-Mazz.) S.Y. Hu, **TFM3** 2; small spreading tree; montane forest; once from the Cameron Highlands, Ph.

50.1.16 **Ilex praetermissa** Kiew, **TFM3** 3; small shrub to 1.5 m tall; quartzite ridges; only known from Klang Gates, Sl; endemic.

50.1.17 **Ilex sclerophylla** Hook.*f.*, **FMP1** 440, **TFM3** 2; small tree; montane forest; Ulu Brang, Tg, Gg Ledang, Jh; endemic.

50.1.18 **Ilex sclerophylloides** Loes., **FMP1** 440, **TFM3** 9; small tree; locally common in montane forest; Kd, Pk, Jh.

50.1.19 **Ilex tahanensis** Kiew, **TFM3** 3; *Ilex rupicola* (*non* H.B.K.) Ridl., **FMP1** 439; small shrub; Gg Rabong, Kl, and Gg Tahan, Ph; endemic.

50.1.20 **Ilex triflora** Blume, **FMP1** 438 incl. var. *longifolia* Ridl., **TFM3** 9; *Ilex polyphylla* Ridl., **FMP1** 438; straggling bush to 5 m tall; common in montane forest; widespread.

51. ARALIACEAE

51.1.1 **Aralia dasphylla** Miq., **TFM3** 16, **FMı9** 17; small prickly tree to 10 m tall; hill forest; Pn, Pk, Ph, Sl, NS.

51.1.2 **Aralia montana** Blume, **TFM3** 15, **FMı9** 22; *Aralia armata* (Wall.) Seem., **FMP1** 873; *Aralia thomsonii* Seem., **FMP1** 873; prickly shrub; lowland and montane forest; widespread.

51.1.3 **Aralia scandens** (Merr.) T.D. Ha. **TFM3** 15, **FMr9** 19; *Aralia ferox auct. non* Miq.; **FMP1** 873; scandent prickly shrub; lowland and montane forest, often near streams; PK, Ph, Sl.

51.2.1 **Arthrophyllum alternifolium** Maingay *ex* Ridl., **FMP1** 886, **TFM3** 17, **FMr9** 67; shrub to 2 m tall; montane forest above 900 m; Ph, Sl, Ml, Jh; endemic.

51.2.2 **Arthrophyllum angustifolium** Ridl., **FMP1** 885, **FMr9** 56; *Arthrophyllum montanum* Ridl. var. *angustifolium* (Ridl.) B.C. Stone, **TFM3** 17; shrub or small tree to 5 m tall; hill forest; Gg Keledang, Pk.

51.2.3 **Arthrophyllum diversifolium** Blume, **FMr9** 60, **TFM3** 17; *Arthrophyllum ovatifolium* Jungh. & de Vriese, **FMP1** 885; *Arthrophyllum congestum* Ridl., **FMP1** 887; sparsely-branched tree to 14 m tall; forest margins or secondary forest in lowlands and hills; abundant throughout.

51.2.4 **Arthrophyllum maingayi** Philipson, **TFM3** 17, **FMr9** 64; *Arthrophyllum pinnatum auct. non* (Lam.) C.B. Clarke, **FMP1** 886; shrub to 2 m tall; hill forest; Pn, Sl, NS, Jh.

51.2.5 **Arthrophyllum montanum** Ridl., **FMP1** 886, **TFM3** 17 incl. var. *ovatum* (Ridl.) B.C. Stone, **FMr9** 65; *Arthrophyllum nitidum* Ridl., **FMP1** 886; *Arthrophyllum ovatum* Ridl., **FMP1** 886; small tree to 8 m tall; hill forest at 250-1500 m; Kd, Kl, Tg, Pk, Ph, Sl; endemic.

51.2.6 **Arthrophyllum stonei** A.-L. Lim, **L21** 263; tree to 7 m tall; montane forest; Ph, Sl; endemic.

51.3.1 **Brassaiopsis elegans** Ridl., **FMP1** 888, **TFM3** 19, **FMr9** 95; slender erect shrub to 2 m tall; lower montane forest at 800 m; Ph, Sl; endemic.

51.3.2 **Brassaiopsis glomerulata** (Blume) Regel, **TFM3** 19, **FMr9** 94; tree to 10 m tall; montane forest; Ph, NS.

51.3.3 **Brassaiopsis minor** B.C. Stone, **TFM3** 19, **FMr9** 93; shrub; lowland and lower montane forest to 1100 m; collected twice in Tg; endemic.

51.3.4 **Brassaiopsis polyacantha** (Wall.) R.N. Banerjee, **TFM3** 20, **FMr9** 93; *Brassaiopsis palmata* Kurz, **FMP1** 887; thorny sparsely-branched tree to 13 m tall; hill and lower montane forest above 500 m; Kd, Pk, Ph, Sl.

51.3.5 **Brassaiopsis simplex** (King) B.C. Stone, **TFM3** 20, **FMr9** 93; *Wardenia simplex* King, **FMP1** 887; prickly shrub to 5 m tall; open bamboo forest in lowlands and hills to 800 m; known from three collections, Pk, Sl; endemic.

51.4.1 **Dendropanax lancifolius** (Ridl.) Ridl., **FMP1** 884, **TFM3** 22, **FMr9** 101; tree to 14 m tall; hill forest 300–1500 m; Ulu Batang Padang and Gg Kledang Saiong, Pk.

51.4.2 **Dendropanax maingayi** King, **FMP1** 884, **TFM3** 22, **FMı9** 101; slender shrub to 1.5 m tall; montane forest on exposed ridges and summits; Kd, Pk, Ph, Ml, Jh; endemic.

51.5.1 **Eleutherococcus malayanus** (M.R. Hend.) B.C. Stone, **S49** 395, **FMı9** 554; *Acanthopanax malayanus* M.R. Hend., **TFM3** 14, **FMı9** 103; tree to 17 m tall; montane forest at 1300–1800 m; Kl, Ph.

51.6.1 **Gastonia serratifolia** (Miq.) Philipson, **FMı9** 68; *Gastonia papuana* Miq., **TFM3** 23; tree to 20 m tall; only known from P. Pisang, Jh.

51.7.1 **Macropanax dispermus** (Blume) Kuntze, **FMı9** 86; tree to 18 m tall; montane forest.

51.7.2 **Macropanax maingayi** (C.B. Clarke) Philipson, **FMı9** 87; *Hederopsis maingayi* C.B. Clarke, **FMP1** 888, **TFM3** 23; *Hederopsis major* Ridl., **TFM3** 24; tree to 15 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl, Ml.

51.8.1 **Schefflera actinophylla** (Endl.) Harms, **TFM3** 31; *Brassaia singaporensis* Ridl., **FMP1** 883; shrub or tree, terrestrial or epiphytic; lowland forest; Sp; probably introduced.

51.8.2 **Schefflera aff. beccariana** rom., **TFM3** 31; epiphytic shrub; lowland swamp forest; Jh; endemic.

51.8.3 **Schefflera biternata** (C.B. Clarke) Harms, **FMP1** 881, **TFM3** 28; scrambling shrub; hill forest; Pn, Pk, ?Ml; endemic.

51.8.4 **Schefflera cephalotes** (C.B. Clarke) Harms, **FMP1** 875, **TFM3** 31; *Schefflera capitellata* Ridl., **FMP1** 876; shrub, usually epiphytic; hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Sp; endemic.

51.8.5 **Schefflera elliptica** (Blume) Harms, **TFM3** 29; *Schefflera venulosa auct. non* (Wight & Arn.) Harms, **FMP1** 880 in part, incl. var. *curtisii* Ridl.; *Schefflera micrantha* [*non* (C.B. Clarke) Gamble] (Miq.) Ridl., **FMP1** 881; *Schefflera* '*calcicola*' Frodin *ined.*, **TFM3** 31; climber or straggling shrub, often epiphytic; lowland and hill forest, also mangroves and on limestone; Ps, Kd, Kl, Tg, Pn, Pk, Sl, Ml, Jh, Sp.

51.8.6 **Schefflera hullettii** (King) R. Vig., **FMP1** 877, **TFM3** 32; *Schefflera scortechinii* (King) R. Vig., **FMP1** 876; *Schefflera elegans* (Ridl.) Ridl., **FMP1** 878; epiphytic shrub or climber; lowland and hill forest; Kd, Kl, Pn, Ph, Jh, Sp.

51.8.7 **Schefflera heterophylla** (Wall. *ex* G. Don) Harms, **FMP1** 881, **TFM3** 28; *Schefflera curtisii* (King) Ridl., **FMP1** 882; scrambling shrub; lowland forest, including that on limestone; Kd, Tg, Pn, Pk, Ph, Sl, Jh; endemic.

51.8.8 **Schefflera lanceolata** Ridl., **TFM3** 28, **FMP3** 875; climber; rocks near the sea, mangrove; Tg, Ph, Sp; endemic.

51.8.9 **Schefflera latifoliolata** (King) R. Vig., **FMP1** 877 '*latifoliata*', **TFM3** 32; *Schefflera pergamacea* [*non* (Blume) R. Vig.] (Hassk.) Ridl., **FMP1** 876; shrub, terrestrial or epiphytic; montane forest; Pk, Ph; endemic.

51.8.10 **Schefflera 'longicaudata'** Frodin *ined.*, **TFM3** 30; *Schefflera scandens* [*non* (Blume) R. Vig.] (Seem.) Ridl., **FMP1** 878; slender creeper to 2 m long; lowland and hill forest; Pk, Sl; endemic.

51.8.11 **Schefflera lurida** (King) Ridl., **FMP1** 875, **TFM3** 28; slender epiphytic creeper or shrub; lower montane forest; Pk, Ph; endemic.

51.8.12 **Schefflera 'nanocephala'** Frodin *ined.*, **TFM3** 31; terrestrial or epiphytic tree to 6 m tall; montane forest; Pk, Ph, Sl; endemic.

51.8.13 **Schefflera nervosa** (King) R. Vig., **FMP1** 879, **TFM3** 29; shrub or small tree; montane forest; Tg, Pk, Ph; endemic.

51.8.14 **Schefflera oxyphylla** (Miq.) R. Vig., D. G. Frodin *pers. comm.*; *Schefflera subulata* (Miq.) R. Vig., **FMP1** 878, **TFM3** 30; *Schefflera klossii* Ridl., **FMP1** 876; *Schefflera subracemosa* Ridl., **FMP1** 878; epiphytic climber; lowland and hill forest; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.

51.8.15a **Schefflera ridleyi** (King) R. Vig. var. **polyandra** (Ridl.) Frodin, **TFM3** 29; *Schefflerops polyandra* (Ridl.) Ridl., **FMP1** 879; epiphytic shrub; montane forest; Pk; endemic.

51.8.15b **Schefflera ridleyi** (King) R. Vig. var. **ridleyi**, **FMP1** 879, **TFM3** 29, *Schefflera musangensis* M.R. Hend., **H33** 105; epiphytic shrub, occasionally epilithic; lowland and hill forest, also in mangroves; Kl, Tg, Pk, Ph, Ml, Jh, Sp; endemic.

51.8.16 **Schefflera roxburghii** Gamble, **FMP1** 880, **TFM3** 30; *Schefflera venulosa auct. non* (Wight & Arn.) Harms, **FMP1** 880 in part; scandent shrub; Pn, ?Ml; dubiously native.

51.8.17 **Schefflera simulans** Craib, **TFM3** 28; *Schefflera affinis* [*non* Baill.] (King) R. Vig., **FMP1** 879; terrestrial or epiphytic shrub to 3 m tall; montane forest; Pk.

51.8.18 **Schefflera singalensis** (Miq.) R. Vig., **FMP1** 877 '*singalangensis*', **TFM3** 30; epiphytic shrub or liana; lowland and hill forest; Pk, Ph.

51.8.19 **Schefflera singularis** B.C. Stone, **TFM3** 28; shrub or climber; montane forest; known only from Gg Ulu Kali, Ph; endemic.

51.8.20 **Schefflera subintegra** Craib, D. G. Frodin *pers. comm.*; *Tupidanthus calyptratus auct. non* Hook.*f.* & Thomson, **FMP1** 889; *Schefflera pueckleri auct. non* (K. Koch) Frodin, **TFM3** 31 (Malayan specimens); small tree or woody climber; montane forest; Pk, Ph.

51.8.21 **Schefflera tomentosa** (Blume) Harms, **FMP1** 877; *Schefflera farinosa* [*non* (Teijsm. & Binn.) P.M.W. Dakkus] (Blume) Merr., **TFM3** 29; shrub or climber, terrestrial or epiphytic; lowland forest, including swamps and on limestone; Pk, Ph, Sl, Jh; endemic.

51.8.22 **Schefflera tristis** (King) Ridl., **FMP1** 875, **TFM3** 29; terrestrial or epiphytic shrub to 3 m tall; montane forest; Tg, Pk, Ph; endemic.

51.8.23 **Schefflera wrayi** (King) R. Vig., **FMP1** 882, **TFM3** 30; small tree; upper montane forest at 2100 m; Pk, Ph; endemic.

51.8.24 **Schefflera yatesii** Merr., **TFM3** 32; scandent shrub; lowland forest; Kl, Tg. D. G. Frodin informs me that there are more *Schefflera* species awaiting description in Malaya.

51.9.1 **Trevesia burckii** Boerl., **TFM3** 33, **FMı9** 97; *Trevesia cheirantha* (C.B. Clarke) Kuntze, **FMP1** 882; prickly shrub or small tree to 10 m tall; lowland forest; Kd, Tg, Pn, Pk, Ph, Sl, Ns, Ml, Jh, Sp.

51.9.2 **Trevesia rufosetosa** Ridl., **FMP1** 883, **TFM3** 33, **FMı9** 97; prickly-stemmed shrub; montane forest; Fraser's Hill, Ph, Semangkok Pass, Sl; endemic. This species should be in *Brassaiopsis* (M. Jebb *pers. comm.*).

52. ARALIDIACEAE

52.1.1 **Aralidium pinnatifitidum** (Jungh. & de Vriese) Miq., **FMP1** 895, **TFM3** 34, **FMı9** 16; shrub or small tree to 10 m tall; lowland and hill forest to 1250 m; throughout.

53. ARISTOLOCHIACEAE

53.1.1 **Aristolochia curtisii** King, **FMP3** 18, **FMı10** 89; slender climber to 5 m high; lowland forest; Pn.

53.1.2 **Aristolochia foveolata** Merr., **FMı10** 91; twining climber to 10 m tall; lowland forest; Tg.

53.1.3 **Aristolochia jackii** Steud., **FMı10** 88; *Aristolochia ungulifolia* Mast., **FMP3** 18; shrub or twining climber; lowland forest; Ph, P. Jarak, Sp.

53.1.4 **Aristolochia minutiflora** Ridl. *ex* Gamble, **FMP3** 18 incl. var. *dolabrata* Gamble, **FMı10** 93; scandent shrub or climber reaching 10 m; lowland and hill forest; Pk, Jh.

53.1.5 **Aristolochia tagala** Cham., **FMP3** 18, **FMı10** 94; twining climber reaching 20 m tall; lowland forest; widespread.

53.2.1 **Thottea corymbosa** (Griff.) Ding Hou, **FMi10** 78; *Apama corymbosa* (Griff.) Willd. *ex* Soler., **FMP3** 15; shrub to 5 m tall; lowland and hill forest; widespread.

53.2.2 **Thottea dependens** (Planch.) Klotzsch, **FMP3** 16, **FMi10** 75; shrub to 2.5 m tall; lowland forest to 500 m; Pn, Tg, Pk, Ph, Sl, Sp; endemic.

53.2.3 **Thottea grandiflora** Rottb., **FMP3** 16, **FMi10** 69; shrub to 2 m tall; lowland and hill forest to 600 m; Tg, Pk, Ph, NS, Ml, Jh, Sp.

53.2.4 **Thottea parviflora** Ridl., **FMP3** 17, **FMi10** 67; shrub to 2 m tall; lowland forest; P. Langkawi, Kd, Kl, Pk, Ph, Sl.

53.2.5 **Thottea sumatrana** (Merr.) Ding Hou, **FMi10** 81; undershrub to 1 m tall; lowland forest; Pd, Kd.

53.2.6 **Thottea tomentosa** (Blume) Ding Hou, **FMi10** 79; *Apama tomentosa* (Blume) Engl. *ex* Soler., **FMP3** 15; creeping undershrub to 40 cm tall; lowland forest; widespread.

53.2.7 **Thottea tricornis** Maingay *ex* Hook.*f*., **FMP3** 16, **FMi10** 74; shrub to 2 m tall; hill forest at 300–600 m; Pk, Ph, Sl, Ml.

54. ASCLEPIADACEAE

54.1.1 **Asclepias curassavica** L., **FMP2** 379, **B03** 251, **H55** 74; herb to 1 m tall; open sandy spots; widespread; naturalized from tropical America.

54.2.1 **Atherandra acutifolia** Decne., **FMP2** 374, **B03** 249; slender twining vine; thickets; P. Langkawi, Pn.

54.3.1 **Calotropis gigantea** (L.) W.T. Aiton, **FMP2** 379, **R01** 306; shrub to 2 m tall; weed of dry open places, often cultivated; widespread, possibly not native.

54.4.1 **Ceropegia langkawiensis** Rintz, **R22** 225; twining vine to 6 m in length; sandy shore near limestone outcrop; P. Langkawi; endemic.

54.4.2 **Ceropegia lucida** Wall., **FMP2** 412; slender climber; hill forest; Pn.

54.5.1 **Cryptolepis perakensis** (King & Gamble) P.I. Forst., **F09** 70; *Phyllanthera perakensis* King & Gamble, **FMP2** 371; woody climber to 5 m long; lowland forest; Pk.

54.6.1 **Cynanchum carnosum** (R. Br.) Schltr., **F07** 526; *Ischnostemma selangoricum* King & Gamble, **FMP2** 380, *Ischnostemma carnosum* (R. Br.) Merr. & Rolfe; **K15** 17; slender twiner; open country; Sl.
Liede [**L20**] considers this species better placed in *Pentatropis*.

54.6.2 **Cynanchum corymbosum** Wight, **FMP2** 381; slender twiner; lowland forest; Pk, Pn.

54.6.3 **Cynanchum ovalifolium** Wight, **FMP2** 381 incl. var. *angustifolium* Ridl., **B03** 253; *Cynanchum laeve* [*non* Pers.] (Blume) K. Schum., **K15** 253; slender vine; forest margins; widespread.

54.6.4 **Cynanchum seimundii** Ridl., **FMP2** 381; vine; Kuala Tahan, Ph; endemic.

54.7.1a **Dischidia acutifolia** Maingay. *ex* Hook.*f*. ssp. **acutifolia**, **FMP2** 408, **R24** 101; twining epiphyte; lowland forest understorey; widespread.

54.7.1b **Dischidia acutifolia** Maing. *ex* Hook.*f*. ssp. **klossii** (Kerr) Rintz, **R24** 101; twining epiphyte; lowland forest; Sl.

54.7.2 **Dischidia albida** Griff., **FMP2** 407, **R24** 100; *Dischidia fultonii* M.R. Hend., **H31** 51; slender twining epiphyte; commonest in the mountains, sometimes lower; widespread.

54.7.3 **Dischidia albiflora** Griff., **R22** 94; *Dischidia collyris* Wall., **FMP2** 404; creeping epiphyte, leaves convex; on trees near the sea; scattered.

54.7.4 **Dischidia astephana** Scort. *ex* King & Gamble, **FMP2** 403, **R24** 91; slender creeping epiphyte, leaves convex; montane forest to highest peaks; widespread.

54.7.5 **Dischidia bengalensis** Colebr., **FMP2** 405, **R24** 97; long creeping epiphyte; coasts to mountains at 1700 m; widespread.

54.7.6 **Dischidia cochleata** Blume, **R24** 90; *Dischidia coccinea* Griff., **FMP2** 404; creeping epiphyte, leaves convex; lowland and hill forest; Ph, Sl, Ml, Sp.

54.7.7 **Dischidia complex** Griff., **FMP2** 405, **R24** 97; slender creeping epiphyte, some leaves pitcher-like; lowland forest; southern Malaya.

54.7.8 **Dischidia dolichantha** Schltr., **R24** 100; *Dischidia tubuliflora* King & Gamble, **FMP2** 409; wiry twining epiphyte; montane forest; Pk, Ph.

54.7.9 **Dischidia fruticulosa** Ridl., **FMP2** 408, **R24** 101; shrubby epiphyte; hill forest; Pk, Ph; endemic.

54.7.10 **Dischidia hirsuta** (Blume) Decne., **FMP2** 406, **R24** 94; hairy twining epiphyte; lowland and hill forest, also on limestone; widespread.

54.7.11 **Dischidia imbricata** (Blume) Steud., **R24** 91; *Dischidia depressa* C.B. Clarke *ex* King & Gamble, **FMP2** 404; slender twining epiphyte, leaves convex; lowland forest; Ps, Ml.

54.7.12 **Dischidia longepedunculata** Ridl., **FMP2** 404, **R24** 97; creeping epiphyte, leaves convex; montane forest; Sl, Ph; endemic.

54.7.13 **Dischidia major** (Vahl) Merr., **R24** 92; *Dischidia rafflesiana* Wall., **FMP2** 405; creeping epiphyte, some leaves pitcher-like; lowland and hill forest, common near the sea; widespread.

54.7.14 **Dischidia nummularia** R.Br., **R24** 98; *Dischidia gaudichaudii* Decne., **FMP2** 406; creeping epiphyte; on trees in the open; common throughout.

54.7.15 **Dischidia parvifolia** Ridl., **FMP2** 410, **R24** 95; slender twining epiphyte; montane forest; Ph, Sl; endemic.

54.7.16 **Dischidia pubescens** Ridl., **FMP2** 409, **R24** 102; creeping epiphyte; lowland forest; once from Pk, dubious species.

54.7.17 **Dischidia punctata** (Blume) Decne., **R24** 93; *Dischidia viridiflora* Ridl., **FMP2** 410; long twining epiphyte; lowland and hill forest; Kl, Sl.

54.7.18 **Dischidia rhodantha** Ridl., **FMP2** 407, **R24** 93; slender twining epiphyte; montane forest; Ph; endemic.

54.7.19 **Dischidia scortechinii** King & Gamble, **FMP2** 409, **R24** 99; slender twining epiphyte; understorey of montane forest; Pk; endemic.

54.7.20 **Dischidia singaporensis** Ridl., **FMP2** 407, **R24** 92; slender creeping epiphyte; on trees; once from Changi, Sp (probably extinct); endemic.

54.7.21a **Dischidia subulata** Warb. ssp. **angustata** Rintz, **R24** 96; twining epiphyte; montane forest; once from near Tanah Rata, Ph; endemic subspecies.

54.7.21b **Dischidia subulata** Warb. ssp. **subulata**, **R24** 96; *Dischidia cordifolia* King & Gamble, **FMP2** 407; *Dischidia ericiflora* Ridl., **FMP2** 408; *Dischidia monticola* King & Gamble, **FMP2** 408; twining epiphyte; montane forest; Ph.

54.7.22 **Dischidia superba** Rintz, **R22** 229, **R24** 102; creeping epiphyte; lowland and hill forest; Kl, Ph, Sl; endemic.

54.7.23 **Dischidia tomentella** Ridl., **FMP2** 409, **C14** 92, **R24** 99; long slender climbing epiphyte; forest on limestone; Ps.

54.7.24 **Dischidia vadosa** Rintz, **R22** 229, **R24** 95; creeping epiphyte; montane forest; Fraser's Hill and Cameron Highlands, Ph; endemic.

54.8.1 **Dregea stellaris** (Ridl.) Ridl., **FMP2** 387; climber; mountains; Fraser's Hill, Ph, & Gg Mengkuang Lebah, Sl; endemic.

54.9.1 **Finlaysonia obovata** Wall., **FMP2** 373; climber; tidal river banks; widespread.

54.10.1 **Genianthus crassifolius** (Wight) Hook.*f.*, **K53** 453; *Genianthus blumei* (Decne.) Boerl., **FMP2** 378; stout climber; lowlands; Pk, Sl.

54.10.2 **Genianthus maingayi** Hook.*f*., **FMP2** 378, **K53** 452; slender twining climber; lowland forest; Pk, Jh, ?Sp.

54.10.3 **Genianthus ridleyi** King & Gamble, **FMP2** 378, **K53** 463; twiner; montane forest at 1000–1400 m; Taiping Hills, Pk; endemic.

54.10.4 **Genianthus rufovelutinus** King & Gamble, **FMP2** 378, **K53** 458; *Hoya rufolanata* Ridl., **FMP2** 402; stout climber; lowland forest; Pk, P. Tioman, Jh; endemic.

54.10.5 **Genianthus subpeltatus** Klack., **K53** 464; suffrutescent twiner; mossy ridge at 1300 m; only known from type, Fraser's Hill, Ph; endemic.

54.11.1 **Gongronema bracteolatum** King & Gamble, **FMP2** 386; stout woody climber; Gopeng, Pk; endemic.

54.11.2 **Gongronema curtisii** King & Gamble, **FMP2** 386; slender twiner; montane forest; Pn, Pk; endemic.

54.11.3 **Gongronema wallichii** Decne., **FMP2** 386; shrubby climber; Pn, NS, Ml.

54.11.4 **Gongronema wrayi** King & Gamble, **FMP2** 387; slender twiner; Pk; endemic.

54.12.1 **Gongylosperma lanuginosum** Ridl., **FMP2** 372, **C14** 93; small shrub; on limestone; P. Langkawi.

54.13.1 **Goniostemma acuminatum** Wight, **FMP2** 377; slender climber; lowland forest; Pn, Pk.

54.14.1 **Hemidesmus indicus** (L.) W.T. Aiton, **FMP2** 372; slender twiner; lowland forest; Pk.

54.15.1 **Heterostemma fimbriatum** King & Gamble, **FMP2** 393; twiner; Gg Hijau, Pk; endemic.

54.15.2 **Heterostemma piperifolium** King & Gamble, **FMP2** 393, **C14** 93; slender twiner; open forest, often on limestone; north of Malaya.

54.16.1 **Hoya campanulata** Blume, **R21** 495; *Physostelma wallichii* Wight, **FMP2** 411; slender twiner or creeper; lowland and hill forest, often on riverside rocks; widespread.

54.16.2 **Hoya caudata** Hook.*f*., **FMP2** 395 incl. var. *crassifolia* Ridl., **R21** 484; climbing epiphyte; lowland forest, common on limestone; mostly in the north.

54.16.3 **Hoya coriacea** Blume, **FMP2** 397, **R21** 495; *Hoya occlusa* Ridl., **FMP2** 398; stout twining epiphyte; forests from mangroves to hill tops, including limestone; widespread.

54.16.4 **Hoya coronaria** Blume, **FMP2** 400, **R21** 505; hairy twining epiphyte; mangroves, lowland forest incl. quartzite and limestone ridges; widespread.

54.16.5 **Hoya curtisii** King & Gamble, **FMP2** 399, **R21** 505; slender, fleshy creeping epiphyte; hill forest at 700 m; once from near Taiping, Pk; endemic.

54.16.6 **Hoya diversifolia** Blume, **FMP2** 396, **R21** 517; twining epiphyte; lowland forest and limestone hills; widespread.

54.16.7 **Hoya elliptica** Hook.*f.*, **FMP2** 399, **R21** 505; slender twining epiphyte; often along rivers; Pk, Sl, Ml, Sp; endemic.

54.16.8 **Hoya endauensis** Kiew, **K32** 261; epiphytic climber; on riverside tree; Ulu Endau, Jh; endemic.

54.16.9 **Hoya erythrina** Rintz, **R21** 501; twining epiphyte; hill forest at 400–700 m; Kl, Ph, Sl; endemic.

54.16.10 **Hoya erythrostemma** Kerr, **R21** 508; twining epiphyte; on riverside tree; Sl, ?elsewhere.

54.16.11 **Hoya finlaysonii** Wight, **FMP2** 397, **R21** 511; twining epiphyte; along rivers in lowland forest; Pk, Ph, Sl.

54.16.12 **Hoya forbesii** King & Gamble, **FMP2** 397, **R21** 517; twining epiphyte; lowland forest including that on limestone; throughout.

54.16.13 **Hoya imperialis** Lindl., **FMP2** 399, **R21** 501; shrubby climber; mangrove and lowland forest; Pk, Sl, Ml, Jh.

54.16.14 **Hoya lacunosa** Blume, **FMP2** 395, **R21** 490; slender creeping epiphyte; lowland and hill forest; widespread.

54.16.15 **Hoya lasiantha** Korth. *ex* Miq., **FMP2** 398, **R21** 498; climbing epiphyte; lowland and hill forest; Pk, Sl.

54.16.16 **Hoya latifolia** G. Don, **FMP2** 395, **R21** 508; long climbing and creeping epiphyte; lowland forest; Ph, Jh, Sp.

54.16.17 **Hoya micrantha** Hook.*f.*, **R21** 486; *Hoya plicata* King & Gamble, **FMP2** 402; stout twining epiphyte; montane forest at 800–1000 m; Pk, Ph.

54.16.18 **Hoya mitrata** Kerr, **R21** 498; twining epiphyte; lowland and hill forest; Pk, Ph, Sl, Jh.

54.16.19 **Hoya multiflora** Blume, **FMP2** 398, **R21** 492; shrubby epiphyte; mostly in hill forest at 500–900 m; widespread.

54.16.20 **Hoya obtusifolia** Wight, **FMP2** 399, **R21** 520; stout-stemmed twining epiphyte; mangroves; Pk and Ph to Sp.

54.16.21 **Hoya parviflora** Wight, **FMP2** 401, **R21** 486; wiry twiner; lowland forest; widespread.

54.16.22 **Hoya pusilla** Rintz, **R21** 492; slender twining epiphyte; lowland forest on river banks; Sg Tahan, Ph; endemic.

54.16.23 **Hoya revoluta** Wight, **FMP2** 401, **R21** 486; slender twiner; beaches to hill tops; widespread.

54.16.24 **Hoya scortechinii** King & Gamble, **FMP2** 400, **R21** 511; twining climbing epiphyte; lowland forest; Pk, Ph, Jh; endemic.

54.16.25a **Hoya verticillata** (Vahl) G. Don var. **citrina** (Ridl.) Veldkamp *ined.*; *Hoya citrina* Ridl., **FMP2** 397, **C14** 93, **K50** 33; *Hoya parasitica* Wall. *ex* Wight var. *citrina* (Ridl.) Rintz, **R21** 514; twining epiphyte; along lowland rivers and on limestone hills; Pk, Ph, Sl; endemic.

54.16.25b **Hoya verticillata** (Vahl) G. Don var. **hendersonii** (Kiew) Veldkamp *ined.*; *Hoya parasitica* Wall. *ex* Wight var. *hendersonii* Kiew, **K45** 66; glabrous twiner; lower montane forest at 1200–1260 m; Cameron Highlands & Fraser's Hill, Pk; endemic variety.

54.16.25c **Hoya verticillata** (Vahl) G. Don var. **verticillata**, **V35** 427; *Hoya parasitica* Wall. *ex* Wight, **FMP2** 396, **R21** 514; *Hoya ridleyi* King & Gamble, **FMP2** 401; climbing twining epiphyte; often near the sea; all coasts.

54.16.26 **Hoya wrayi** King & Gamble, **R21** 484; *Physostelma wrayi* (King & Gamble) Ridl., **FMP2** 411; twining epiphyte; montane forest at 1000–1500 m; Gg Batang Padang, Pk, and Fraser's Hill, Ph; endemic.

54.17.1 **Lygisma flavum** (Ridl.) Kerr, **K15** 30; *Gymnema flavum* Ridl., **FMP2** 385; *Tylophora ridleyi* M.R. Hend., **H35** 111; slender twiner; river bank; Temengoh, Pk.

54.18.1 **Marsdenia acuminata** (Roxb.) I.M. Turner, **T21** 23; *Gymnema acuminatum* (Roxb.) Wall., **FMP2** 384; twining shrub; open country; P. Langkawi, Ml.

54.18.2 **Marsdenia dissitiflora** (Ridl.) P.I. Forst., **F11** 693; *Gymnema dissitiflorum* Ridl., **FMP2** 384; slender twiner; lowland forest; only known from type, Tapah, Pk; endemic.

54.18.3 **Marsdenia forsteri** I.M. Turner, **T21** 25; *Gymnema maingayi* Hook.*f.*, **FMP2** 384; slender twiner; Ml.

54.18.4 **Marsdenia hirta** (Ridl.) P.I. Forst., **F11** 693, *Gymnema hirtum* Ridl., **FMP2** 385; slender climber; montane forest; only known from type, Semangkok Pass, Sl; endemic.

54.18.5 **Marsdenia lactifera** (L.) I.M. Turner, **T21** 25; *Gymnema lactiferum* (L.) R. Br. *ex* Schult., **FMP2** 385, **H55** 98; slender twiner; Pn, Pk, Ml.

54.18.6 **Marsdenia maingayi** (Hook.*f.*) P.I. Forst, **F11** 700; *Stephanotis maingayi* Hook.*f.*, **FMP2** 389; large climbing shrub; forest margin; Ph, Ml, Jh, Sp; ?endemic.

54.18.7 **Marsdenia ridleyi** P.I. Forst., **F11** 700; *Stephanotis parviflora* Ridl., **FMP2** 390; creeper; forest margins; Pk; endemic.

54.18.8 **Marsdenia scortechinii** King & Gamble, **FMP2** 388; twiner; Pk; ?endemic.

54.18.9 **Marsdenia thyrsiflora** Hook.*f.*, **FMP2** 388; climber; river banks in lowland forest; Ph.

54.18.10 **Marsdenia tinctoria** R.Br., **FMP2** 388, **B03** 272; small shrub; open places, often on limestone, possibly relic of cultivation; mostly in the north.

54.18.11 **Marsdenia tingens** (Roxb.) P.I. Forst., **F11** 692; *Gymnema tingens* (Roxb.) Roxb., **FMP2** 385; slender climbing shrub; Pk.

54.19.1 **Meladerma insularum** (King & Gamble) Kerr, **K15** 5; *Gymnanthera insularum* King & Gamble, **FMP2** 373, **C14** 93; liana; on limestone; P. Langkawi.

54.20.1 **Pentanura sumatrana** Blume, **FMP2** 371; climber; Pk.

54.22.1 **Pentasacme caudatum** Wall. *ex* Wight, **FMP2** 383, **R02** 115; wiry-stemmed rheophytic herb; on rocks in forest streams; Pk, Ph.

54.22.1 **Pycnorhachis maingayi** Hook.*f.*, **FMP2** 411; hairy twiner; once from Ml, endemic.

54.23.1 **Raphistemma pulchellum** (Roxb.) Wall., **FMP2** 380, **B03** 252; bushy climber; lowlands; P. Langkawi, Pk, NS.

54.24.1 **Sarcolobus globosus** Wall., **FMP2** 382, **R23** 73; twiner; tidal mud; Kl, Pk, Ph, Ml, Jh, Sp.

54.25.1 **Sarcostemma brunonianum** Wight & Arn., **S48** 262, **H55** 82; twining climber; on limestone; P. Langkawi.

54.26.1 **Secamone elliptica** R.Br., **F12** 70; *Secamone micrantha* (Decne.) Decne., **FMP2** 375; slender liana; open places near the sea; widespread.

54.27.1 **Streptocaulon juventas** (Lour.) Merr., **K15** 6; *Streptocaulon griffithii* Hook.*f.*, **FMP2** 374; liana; once, somewhat dubiously, from Jh.

54.27.2 **Streptocaulon wallichii** Wight, **FMP2** 374; woody climber; open places and forest margins; Ps, P. Langkawi, Pn, Pk.

54.28.1 **Telosma puberula** (Miq.) Kerr, **K15** 32; *Pergularia puberula* Miq., **FMP2** 389; twining shrub; hill forest; Pn.

54.29.1 **Toxocarpus curtisii** King & Gamble, **FMP2** 376; slender climber; hills to 1000 m, lower on limestone; scattered.

54.29.2 **Toxocarpus glabrescens** M.R. Hend., **H35** 109; slender climbing shrub; on hilltops; once from Ulu Endau, Jh; endemic.

54.29.3 **Toxocarpus griffithii** Decne., **FMP2** 376, **B03** 255; slender climber; lowland forest; widespread.

54.29.4 **Toxocarpus lankawiensis** King & Gamble, **FMP2** 377; slender twiner; P. Langkawi.

54.29.5 **Toxocarpus pauciflorus** M.R. Hend., **H35** 110, **C14** 94; climber; on limestone; Kl, Pk, Sl.

54.29.6 **Toxocarpus penangianus** King & Gamble, **FMP2** 376; slender twiner; Pn; endemic.

54.29.7 **Toxocarpus scortechinii** King & Gamble, **FMP2** 376; climber; mountains; Pk.

54.30.1 **Tylophora calcicola** M.R. Hend., **H35** 111, **C14** 94; slender twiner; on limestone; once each from Gua Ninek, Kl, and Bt Cheras, Ph; endemic.

54.30.2 **Tylophora exilis** Colebr., **FMP2** 392; slender twiner; scattered.

54.30.3 **Tylophora flexuosa** R. Br., **F10** 491; *Tylophora tenuis* Blume, **FMP2** 391; *Tylophora tenuissima* (Roxb. *ex* Schult.) Wight & Arn., **H55** 96; *Tylophora tetrapetala* (Dennst.) Suresh, **N11** 64; slender twiner; common along tidal rivers; widespread.

54.30.4 **Tylophora globifera** Hook.*f*., **FMP2** 392; twiner; Pk, Ml.

54.30.5 **Tylophora hirsuta** (Wall.) Wight, **FMP2** 391; twiner; open places; Pn, Pk.

54.30.6 **Tylophora indica** (Burm.*f*.) Merr., **H55** 91, **N11** 64; *Tylophora asthmatica* (L.*f*.) Wight & Arn., **FMP2** 392; slender twiner; sandy places near the sea or rivers; widespread.

54.30.7 **Tylophora longifolia** Wight, **FMP2** 390; slender twiner; montane forest; Pk.

54.30.8 **Tylophora perakensis** King & Gamble, **FMP2** 392, **C14** 94; fleshy climber; often on limestone; Kd, Pk.

54.30.9 **Tylophora splendida** P.I. Forst., **F08** 750; *Tylophora grandiflora* (*non* R. Br.) Ridl., **FMP5** 321; slender climber; hill forest; Ph; endemic.

54.30.10 **Tylophora squarrosa** Ridl., **FMP2** 392; *Tylophora wallichii* Hook.*f*., **FMP2** 391; slender twiner; lowland forest and mangroves; scattered.

55. AVICENNIACEAE

55.1.1 **Avicennia alba** Blume, **FMP2** 641, **TFM3** 299, **D43** 307; tree to 21 m tall; muddy mangroves; widespread.

55.1.2 **Avicennia marina** (Forssk.) Vierh., **TFM3** 300, **D43** 311; *Avicennia intermedia* Griff., **FMP2** 641; *Avicennia sphaerocarpa* Stapf *ex* Ridl., **FMP2** 642; tree to 12 m tall; mangrove; commoner on West Coast.

55.1.3 **Avicennia officinalis** L., **FMP2** 640, **TFM3** 300, **D43** 319; tree to 18 m tall; mangrove, generally on landward fringe; widespread.

55.1.4 **Avicennia rumphiana** Hallier *f.*, **D43** 321; *Avicennia lanata* Ridl., **FMP2** 641, **TFM3** 300; tree to 30 m tall; sandier mangroves; mostly East Coast.

56. BALANOPHORACEAE

56.1.1 **Balanophora abbreviata** Blume, **FMi7** 801, **K23** 544; *Balanophora insularis* Ridl., **FMP3** 175; white or yellow parasitic herb to 10 cm tall; lowland forest to 1000 m; Lenggong, Pk, and P. Aur, Ph.

56.1.2 **Balanophora elongata** Blume, **S47** 130, **FMi9** 554; *Balanophora hansenii* Hambali, **H03** 425; tuberous parasitic herb; montane forest at 1500 m; Gg Ulu Kali, Ph.

56.1.3 **Balanophora fungosa** J.R. Forst. & G. Forst. ssp. **indica** (Arn.) B. Hansen, **FMi7** 795, **K23** 544; *Balanophora gigantea auct. non* Wall. *ex* Fawc., **FMP3** 174; *Balanophora globosa auct. non* Jungh., **FMP3** 174; tuberous orange-yellow parasitic herb to 20 cm tall; montane forest at 500–2000 m; widespread.

56.1.4 **Balanophora latisepala** (Tiegh.) Lecomte, **FMi7** 803, **K23** 545; *Balanophora truncata* Ridl., **FMP3** 174; tuberous yellowish parasitic herb to 25 cm tall; montane rain forest at 1200–1700 m; Ph, Sl.

56.1.5 **Balanophora papuana** Schltr., **FMi7** 798, **K23** 547; *Balanophora multibrachiata* (*non* Fawc.) Burkill & Holttum, **FMP3** 174; tuberous red to yellow parasitic herb to 15 cm tall; lowland and montane rain forest; widespread.

56.1.6 **Balanophora reflexa** Becc., **FMi7** 800, **K23** 547; tuberous orange to dark red parasitic herb to 10 cm tall; lowland forest; Bt Bintang, Ps, and Jengka, Ph.

56.2.1 **Exorhopala ruficeps** (Ridl.) Steenis, **FMi7** 790; *Rhopalocnemis ruficeps* Ridl., **FMP3** 176; parasitic herb with elongated horizontal tuber; dense forest at 100–1200 m; Penara Bukit, Pn, and Taiping Hills, Pk; endemic genus.

57. BALSAMINACEAE

57.1.1 **Hydrocera triflora** (L.) Wight & Arn., **G17** 218, **T05** 128; *Hydrocera angustifolia* Blume, **FMP1** 340 incl. var. *latifolia* Ridl.; erect herb to 1 m tall; marshy places, paddy-fields; Ps, Pn, Kl, Ph, Sl, Ml, Sp (recent arrival).

57.2.1 **Impatiens albo-flava** Miq., **G19** 98; *Impatiens scortechinii* Hook.*f*., **FMP1** 339, **S21** 206, **C14** 97; succulent herb to 1 m tall; limestone; Pk, Ph.

57.2.2 **Impatiens cryptoneura** Hook.*f*., **FMP1** 339, **S20** 208, **C13** 95; herb to 30 cm tall; limestone; once from near Ipoh, Pk; endemic.

57.2.3 **Impatiens curtisii** Hook.*f*., **FMP1** 337; herb to 40 cm tall; damp rocks in hill and montane forest; Taiping Hills, Pk; endemic.

57.2.4 **Impatiens exilipes** Hook.*f*., **FMP1** 337, **S21** 194; herb to 60 cm tall; damp lowland forest to 500 m; Pn, Pk, Ph.

57.2.5a **Impatiens griffithii** Hook.*f*. & Thomson var. **griffithii**, **FMP1** 336, **S21** 192; herb to 60 cm tall; Gg Ledang, Ml; endemic variety.

57.2.5b **Impatiens griffithii** Hook.*f*. & Thomson var. **sarcantha** (Hook.*f*.) T. Shimizu, **S21** 192; *Impatiens sarcantha* Hook.*f*., **FMP1** 336; *Impatiens polcycla* Hook.*f*. *ex* Ridl., **FMP1** 336; herb to 30 cm tall; on rocks in streams, lowlands and mountains; Kd, Pk, Ph.

57.2.6 **Impatiens macrosepala** Hook.*f*., **FMP1** 339, **S21** 205, **C14** 96; herb to 40 cm tall; on limestone; Bt Lagi and Tebing Tinggi, Ps.

57.2.7 **Impatiens mirabilis** Hook.*f*., **FMP1** 337, **S21** 216, **C14** 96; herb to 2.5 m tall with swollen stem-base; limestone; Ps, P. Langkawi, Kd, Ph.

57.2.8 **Impatiens oncidioides** Ridl. *ex* Hook.*f*., **FMP1** 337, **S21** 212; succulent herb to 1.5 m tall; damp spots in montane forest; Pk, Ph, Sl; endemic.

57.2.9 **Impatiens opinata** Craib, **S21** 216, **C14** 96; *Impatiens foxworthyi* M.R. Hend., **H31** 50; herb to 50 cm tall; damp shaded places on limestone; Kl, Ph.

57.2.10 **Impatiens ridleyi** Hook.*f*., **FMP1** 339, **S21** 207, **C14** 96; herb to 40 cm tall; limestone; Gg Senyum, Ph, and Gua Batu, Sl; endemic.

57.2.11 **Impatiens tipusensis** M.R. Hend., **H34** 72, **S21** 208, **C14** 97; creeping herb; on limestone; Gua Tipus, Ph; endemic.

57.2.12 **Impatiens vaughanii** Hook.*f*., **FMP1** 338, **S21** 203, **C14** 97; fleshy herb to 60 cm tall; on limestone; Ps.

57.2.13 **Impatiens wallerana** Hook.*f*. *ex* Oliv., **S21** 210, **G18** 81; succulent herb to 60 cm tall; roadsides and tea plantations; Maxwell Hill, Pk, Cameron Highlands, Ph; naturalized from tropical East Africa.

57.2.14 **Impatiens wrayii** Hook.*f.*, **FMP1** 336, **S21** 194; herb to 30 cm tall; on rocks in streams; Batang Padang, Pk; endemic.

58. BEGONIACEAE

58.1.1 **Begonia aequilateralis** Irmsch., **I03** 134; creeping herb; lowland forest; Sg Buloh, Sl; endemic.

58.1.2 **Begonia alpina** L.B. Sm. & D.C. Wasshausen, **G12** 137; *Begonia monticola* (*non* C. DC.) Ridl., **FMP1** 862, **I03** 128; creeping herb; montane forest; Gg Mengkuang Lebah, Sl; endemic.

58.1.3 **Begonia barbellata** Ridl., **FMP1** 856, **I03** 116; herb 35 cm tall; sandy lowland forest; Kl, Tg, Jh; endemic.

58.1.4 **Begonia carnosula** Ridl., **FMP1** 857, **I03** 146; succulent creeping herb; shaded banks; Ulu Batang Padang, Pk, and Telom, Ph; endemic.

58.1.5 **Begonia collina** Irmsch., **I03** 135; rhizomatous herb; Bt Hitam, Sl; endemic.

58.1.6 **Begonia corneri** Kiew, **K38** 272; creeping herb; on earth banks in lowland forest; known only from type, Sg Nipa, Tg; endemic.

58.1.7 **Begonia curtisii** Ridl., **FMP1** 856, **I03** 149, **C14** 98; tuberous herb to 20 cm tall; on limestone; P. Langkawi.

58.1.8 **Begonia debilis** King, **FMP1** 858, **I03** 157, **C14** 98; herb to 20 cm tall; on rocks in forest, once on limestone; Gg Pondok, Pk, and Gg Tampin, NS; endemic.

58.1.9 **Begonia decora** Stapf, **FMP1** 863, **I03** 121; creeping herb; montane forest; P. Langkawi, Pk, Ph; endemic.

58.1.10 **Begonia eiromischa** Ridl., **FMP1** 860, **I03** 108; **K34** 64; herb; once from Pn; endemic (probably extinct).

58.1.11 **Begonia forbesii** King, **FMP1** 855, **I03** 159, herb to 15 cm tall; Pk; endemic.

58.1.12 **Begonia foxworthyi** Burkill *ex* Ridl., **FMP5** 311, **I03** 100, **C14** 98; tufted herb; on limestone; Kl, Ph; endemic.

58.1.13 **Begonia fraseri** Kiew, **K45** 64; low prostrate herb to 30 cm tall; lower montane forest; Fraser's Hill & Gg Benom, Ph; endemic.

58.1.14 **Begonia guttata** Wall. *ex* A. DC., **FMP1** 858, **I03** 153; small creeping herb; on rocks in lowland forest; P. Langkawi, Pn, Sl.

58.1.15 **Begonia haniffii** Burkill, **I03** 151; herb to 25 cm tall; once from P. Langkawi.

58.1.16a **Begonia herveyana** King var. **barnesii** Irmsch., **I03** 131; large herb; Kluang Terbang, Ph; endemic.

58.1.16b **Begonia herveyana** King var. **herveyana**, **FMP1** 861, **I03** 131; large herb; lowland forest; NS, Ml, Jh; endemic.

58.1.17 **Begonia hirtella** Link, **FMP1** 864; herb to 30 cm tall; shady banks at the Hill Stations; Kd, Pn, Pk, Ph; naturalized from South America.

58.1.18 **Begonia holttumii** Irmsch., **I03** 113; *Begonia isoptera auct. non* Dryand., **FMP1** 855 in part; herb to 1 m tall; Pn, Pk, Sl, NS, Ml, Jh; endemic.

58.1.19 **Begonia ignorata** Irmsch., **I03** 97, **C14** 98; *Begonia hasskarlii* Zoll. & Moritzi var. *hirsuta* Ridl., **FMP1** 860; small creeping herb; on limestone; known only from type, Kota Glanggi, Ph; endemic.

58.1.20 **Begonia isopteroidea** King, **FMP1** 856, **I03** 112; herb to 1 m tall; montane forest; Gg Brumber Pahang, Pk; endemic.

58.1.21 **Begonia kingiana** Irmsch., **I03** 106, **C14** 98; *Begonia hasskarlii auct. non* Zoll. & Moritzi, **FMP1** 860; creeping herb; shandy places on limestone; Kl, Pk, Sl; endemic.

58.1.22 **Begonia klossii** Ridl., **FMP1** 861, **I03** 133; creeping herb; montane forest; Gg Menuang Gasing, Sl; endemic.

58.1.23 **Begonia leucantha** Ridl., **FMP1** 857, **I03** 157; small herb; lowland forest; Pk, Ph; endemic.

58.1.24 **Begonia longicaulis** Ridl., **FMP1** 862, **I03** 120; herb; montane forest; Gg Kerbau, Pk, and Gg Tahan, Ph; endemic.

58.1.25 **Begonia lowiana** King, **FMP1** 864, **I03** 137; herb to 1 m tall; upper montane forest; Pk; endemic.

58.1.26 **Begonia martabanica** A. DC. var. **pseudoclivalis** Irmsch., **I03** 145; *Begonia clivalis* Ridl., **FMP1** 857 in part; herb to 20 cm tall; sandy banks; Ulu Temengoh, Ph; endemic variety.

58.1.27 **Begonia maxwelliana** King, **FMP1** 863, **I03** 118; herb; hill and montane forest; Pn, Pk; endemic.

58.1.28 **Begonia nurii** Irmsch., **I03** 95, **C14** 99; herb; on limestone; Kl, Ph; endemic.

58.1.29 **Begonia paupercula** King, **FMP1** 862, **I03** 122; herb; on rocks in forest; Gopeng, Pk; endemic.

58.1.30 **Begonia pavonina** Ridl., **FMP1** 863, **I03** 123; herb; montane forest; Pk, Ph; endemic.

58.1.31 **Begonia peninsulae** Irmsch., **I03** 98; small creeping herb; once from Tg; endemic subspecies.

58.1.32a **Begonia perakensis** King var. **conjungens** Irmsch., **I03** 129, **T19** 129; herb; on rocks in streams in hill and montane forest; Pk, Sl; endemic.

58.1.32b **Begonia perakensis** King var. **perakensis**, **FMP1** 861 in part, **T19** 129; *Begonia perakensis* var. *rotundata* Irmsch., **I03** 129; herb; on rocks in streams in hill and montane forest; Pk, Sl; endemic.

58.1.33 **Begonia phoeniogramma** Ridl., **FMP1** 858, **I03** 155, **C14** 99; creeping herb to 15 cm tall; shaded crevices in limestone; P. Langkawi, Kl, Sl; endemic.

58.1.34 **Begonia rajah** Ridl., **FMP1** 855, **I03** 96, **K34** 65; herb; lowland forest; Gg Lawit, Tg; endemic.

58.1.35 **Begonia rheifolia** Irmsch., **I03** 132; *Begonia herveyana* King var. *robusta* Ridl., **FMP1** 861; large herb; hill forest; Gg Tahan, Ph; endemic.

58.1.36 **Begonia rhoephila** Ridl., **FMP1** 860, **I03** 137; creeping herb; on rocks in forest streams; Ulu Gombak, Sl; endemic.

58.1.37 **Begonia robinsonii** Ridl., **FMP1** 863, **I03** 125; fleshy herb; montane forest; Ph; endemic.

58.1.38a **Begonia scortechinii** King var. **kunstleriana** (King) Ridl., **FMP1** 860, **I03** 134; herb; Gg Bujung Malacca, Pk; endemic.

58.1.38b **Begonia scortechinii** King var. **scortechinii**, **FMP1** 860, **I03** 133; herb; Pk; endemic.

58.1.39 **Begonia sibthorpioides** Ridl., **FMP1** 859, **I03** 158; tuberous herb; cliff face; Gg Jerai, Kd; endemic.

58.1.40a **Begonia sinuata** Wall. *ex* Meisn. var. **clivalis** (Ridl.) Irmsch., **I03** 144; *Begonia clivalis* Ridl., **FMP1** 857 in part; herb to 20 cm tall; Klang Gates, Sl; endemic variety.

58.1.40b **Begonia sinuata** Wall. *ex* Meisn. var. **etamensis** Irmsch., **I03** 142; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; on damp rocks in hill forest; Bt Hitam, Sl; endemic variety.

58.1.40c **Begonia sinuata** Wall. *ex* Meisn. var. **langkawiensis** Irmsch., **I03** 142; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; forest; P. Langkawi; endemic variety.

58.1.40d **Begonia sinuata** Wall. *ex* Meisn. var. **malaccensis** Irmsch., **I03** 143; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; forest; endemic variety.

58.1.40e **Begonia sinuata** Wall. *ex* Meisn. var. **monophylloides** Irmsch., **I03** 143; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; lowland forest; Sg Tahan, Ph; endemic variety.

58.1.40f **Begonia sinuata** Wall. *ex* Meisn. var. **penangensis** Irmsch., **I03** 142; *Begonia sinuata sensu* Ridl., **FMP1** 856 in part; tuberous herb to 40 cm tall; hill forest; Penang Hill; endemic variety.

58.1.41 **Begonia tampinica** Burkill *ex* Irmsch., **I03** 130; rhizomatous herb; montane forest; Gg Tampin, NS; endemic.

58.1.42 **Begonia thaipingensis** King, **FMP1** 857, **I03** 145; slender creeping herb; sandy places; Pk, Sl; endemic.

58.1.43 **Begonia tiomanensis** Ridl., **I03** 133; herb to 40 cm tall; montane forest; P. Tioman, Ph; endemic.

58.1.44 **Begonia tricornis** Ridl., **FMP1** 854, **I03** 109; herb to 1 m tall; lowland and hill forest; Ph, Sl; endemic.

58.1.45 **Begonia variabilis** Ridl., **FMP1** 858, **I03** 147; herb to 30 cm tall; lowland forest; Pk; endemic.

58.1.46 **Begonia venusta** King, **FMP1** 862, **I03** 126; herb; upper montane forest; Pk, Ph; endemic.

58.1.47 **Begonia wrayi** Hemsl., **K42** 312; *Begonia isoptera auct. non* Dryand., **FMP1** 855 in part; *Begonia pseudoisoptera* Irmsch., **I03** 112; shrubby herb to 1 m tall; lowland and hill forest to 1000 m; Pn, Kl, Pk, Ph, Sl, NS; endemic.

58.1.48 **Begonia yappii** Ridl., **R15** 258; creeping herb; Kuala Aring, Kl; endemic.

59. BIGNONIACEAE

59.1.1 **Deplanchea bancana** (Scheff.) Steenis, **FMi8** 137, **TFM3** 37; *Diplanthera bancana* Scheff., **FMP2** 552; tall tree to 45 m tall; swampy lowland forest; Pn, Sl, NS, Ml.

59.2.1 **Dolichandrone spathacea** (L.*f.*) K.Schum., **FMi8** 142, **TFM3** 39; *Dolichandrone rheedei* (Spreng.) Seem., **FMP2** 549; tree to 24 m tall, usually smaller; mangroves and other muddy areas near the sea; widespread.

59.3.1 **Fernandoa adenophylla** (Wall. *ex* G. Don) Steenis, **FMi8** 159, **TFM3** 39; *Heterophragma adenophyllum* (Wall. *ex* G. Don) Seem. *ex* Benth. & Hook.*f.*, **FMP2** 551; tree to 15 m tall; lowland forest, often on limestone; Ps, Kd, P. Langkawi, ?Sp.

59.4.1 **Hieris curtisii** (Ridl.) Steenis, **FMi8** 127, **TFM3** 37; *Pandorea curtisii* Ridl., **FMP2** 553; slender woody climber; lowland forest; Pn; endemic.

59.5.1 **Oroxylum indicum** (L.) Benth. *ex* Kurz, **FMP2** 548, **FMi8** 128, **TFM3** 40; tree to 18 m tall; lowland forest, often near villages and rice fields; Ml northward.

59.6.1 **Pajanelia longifolia** (Willd.) K.Schum., **FMi8** 163, **TFM3** 40; *Pajanelia multijuga* A.P. DC., **FMP2** 549; tree to 36 m tall; primary and secondary lowland and hill forest; north of Malaya.

59.7.1 **Radermachera glandulosa** (Blume) Miq., **FMi8** 152, **TFM3** 42; *Radermachera stricta* Zoll. & Moritzi *ex* Zoll., **FMP2** 550; small crooked tree to 12 m tall; lowland forest to 900 m; Ml northward.

59.7.2 **Radermachera peninsularis** Steenis, **FMi8** 155; *Radermachera sinica auct. non* (Hance) Hemsl., **TFM3** 42; tree 4–15 m tall; lower montane forest at 1200 m; Cameron Highlands (2 colls.), Ph.

59.7.3 **Radermachera pinnata** (Blanco) Seem. var. **acuminata** (Steenis) Steenis, **FMi8** 154, **TFM3** 42; *Radermachera amoena auct. non* (Wall.) Seem., **FMP2** 551; tree to 27 m tall; lowland forest to 400 m, also on limestone; widespread.

59.8.1 **Spathodea campanulata** P. Beauv., **FMI8** 185; tree to 25 m tall; roadsides, waste places, secondary forest; Sp; naturalized from tropical Africa.

59.9.1 **Stereospermum colais** (Dillwyn) Mabb., **M03** 553, **FMi9** 554, **N11** 73; *Stereospermum chelonoides* [*non* (L.*f.*) A.P. DC.)] A.P. DC., **FMP2** 550; *Stereospermum personatum* (Hassk.) Chatterjee, **FMi8** 148, **TFM3** 44; tree to 30 m tall; lowland forest; Pn, Sp.

59.9.2 **Stereospermum fimbriatum** (Wall. *ex* G. Don) A. DC., **FMP2** 550, **FMi8** 146, **TFM3** 44; tree reaching 27–30 m tall; lowland and hill forest to 1000 m, often planted; widespread.

60. BOMBACACEAE

60.1.1 **Bombax anceps** Pierre, **TFM1** 104; *Bombax insularis* Ridl., **FMP1** 260; tree to 12 m tall; rocky places near the sea; P. Langkawi, Pn.

60.1.2 **Bombax valetonii** Hochr., **TFM1** 104; *Bombax larutensis* Ridl., **FMP1** 260; tree to 35 m tall; lowland and hill forest; north of the Peninsula.

60.2.1 **Coelostegia borneensis** Becc., **TFM1** 106; tree to 30 m tall; lowland forest; Ph, Jh.

60.2.2 **Coelostegia griffithii** Benth., **FMP1** 266, **TFM1** 106; tree to 35 m tall; lowland and hill forest; scattered throughout.

60.3.1 **Durio affinis** Becc., **TFM1** 109; tree to 25 m tall; lowland forest; Tg, Jh.

60.3.2 **Durio carinatus** Mast., **TFM1** 109; tree to 25 m tall; peat swamp forest; Ph, Jh.

60.3.3 **Durio graveolens** Becc., **TFM1** 109; tree to 40 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Sl, Ml, Jh.

60.3.4 **Durio griffithii** (Mast.) Bakh., **TFM1** 110; *Boschia griffithii* Mast., **FMP1** 265; tree; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

60.3.5 **Durio lowianus** Scort. *ex* King, **FMP1** 263, **TFM1** 110; *Durio wrayi* King, **FMP1** 264; tree to 40 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

60.3.6 **Durio macrophyllus** (King) Ridl., **FMP1** 264, **TFM1** 111; tree; lowland forest; Kl, Pk, Ph; endemic.

60.3.7 **Durio malaccensis** Planch. *ex* Mast., **FMP1** 262, **TFM1** 111; tree to 20 m tall; lowland and hill forest; Tg, Sl, NS, Ml, Jh.

60.3.8 **Durio oxleyanus** Griff., **FMP1** 263, **TFM1** 111; tree to 30 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh.

60.3.9 **Durio pinangianus** (Becc.) Ridl., **FMP1** 264, **TFM1** 112; small tree; hill forest; Pn, Pk; endemic.

60.3.10 **Durio singaporensis** Ridl., **FMP1** 263, **TFM1** 113; tree to 30 m tall; lowland and hill forest; Tg, Ph, NS, Jh, Sp; endemic.

60.3.11 **Durio wyatt-smithii** Kosterm., **TFM1** 113; tree to 30 m tall; lowland forest; Kl, Tg.

60.3.12 **Durio sp.** A, **TFM1** 116; tree to 20 m tall; once from Kluang, Jh.

60.4.1 **Kostermansia malayana** Soegeng, **TFM1** 116; tree to 45 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Jh; endemic.

60.5.1 **Neesia altissima** (Blume) Blume, **TFM1** 118; tree to 30 m tall; lowland forest; Pk, Sp.

60.5.2 **Neesia kostermansiana** Soepadmo, **TFM1** 118; tree to 25 m tall; lowland freshwater swamp forest; Pk, Sl.

60.5.3 **Neesia malayana** Bakh., **TFM1** 118; tree to 25 m tall; fresh water swamp forest; Tg, Ph, Jh, Sp.

60.5.4 **Neesia pilulifera** Becc., **TFM1** 118; tree to 20 m tall; lowland forest; Sl.

60.5.5 **Neesia synandra** Mast., **FMP1** 265, **TFM1** 119; tree to 30 m tall; wet lowland forest; scattered throughout.

61. BORAGINACEAE

61.1.1 **Argusia argentea** (L.*f.*) Heine, **H29** 109; *Tournefortia argentea* L.*f.*, **FMP2** 440; *Messerschmidia argentea* (L.*f.*) I.M. Johnst., **TFM4** 64; shrub to 3 m tall; sandy coasts of offshore islands; P. Langkawi, and P. Babi Tengah and P. Tinggi, Jh.

61.2.1 **Carmona retusa** (Vahl) Masam., **TFM4** 59; *Ehretia buxifolia* Roxb., **FMP2** 442; shrub or small tree to 4 m tall; open dry sandy spots, waste places; native to Ph, cultivated and escaped elsewhere.

61.3.1 **Coldenia procumbens** L., **FMP2** 442, **TFM4** 58; prostrate creeping herb; weed of open places; Ps, Kd, Tg, Ph.

61.4.1 **Cordia cylindristachya** (Ruiz & Pav.) Roem. & Schult., **TFM4** 60; shrub to 4 m tall; waste places; throughout Malaya; naturalized from tropical America.

61.4.2 **Cordia dichotoma** G. Forst., **TFM4** 60; *Cordia griffithii* C.B. Clarke, **FMP2** 439; *Cordia obliqua* Willd., **FMP2** 439; *Cordia premnifolia* Ridl., **FMP2** 439; tree to 13 m tall, rarely climbing; lowland forest, back mangrove, on limestone; Ps, Kd, Pk, Ph, Sl, Ml, Jh, Sp.

61.4.3 **Cordia subcordata** Lam., **FMP2** 439, **TFM4** 62; tree to 15 m tall; rocky and sandy sea shores; Ps, Kd, Pn, Pk, Ph, Jh, Sp.

61.5.1 **Ehretia parallela** C.B. Clarke, **FMP2** 442, **TFM4** 63; tree to 24 m; hill forest at 800–1000 m; Pn, Sl.

61.5.2 **Ehretia timorensis** Decne., **FMP2** 442, **TFM4** 63; scrambling shrub or small tree to 16 m tall; lowland forest, often near the sea, also on limestone; P. Langkawi, Pk, Ph, Sl, Jh.

61.6.1 **Heliotropium indicum** L., **FMP2** 441, **TFM4** 58, **M44** 114; herb to 50 cm tall; weed of cultivation, waste places; throughout.

61.7.1 **Pteleocarpa lamponga** (Miq.) Bakh. *ex* Heyne, **TFM4** 64; *Pteleocarpa malaccensis* Oliv., **FMP2** 464; tree to 37 m tall; lowland and hill forest to 600 m; Kl, Tg, Pn, Ph, Sl, Ml, Jh, Sp.

61.8.1 **Rotula aquatica** Lour., **TFM4** 59, **V20** 209; *Rhabdia lycioides sensu* C.B. Clarke, **FMP5** 323; rheophytic shrub to 2 m tall; river banks; north of Malaya.

61.9.1 **Tournefortia tetrandra** Blume, **TFM4** 65; *Tournefortia wallichii* DC., **FMP2** 441; shrub or woody climber; lowland to lower montane forest, reaching 1130 m; Pn, Pk, Ph, Sl, Jh, Sp.

62. BUDDLEJACEAE

62.1.1 **Buddleja asiatica** Lour., **FMP2** 414, **FMi6** 337, **TFM2** 268; shrub or small tree 1–7 m tall; open places and secondary forest in the lowlands; Pn, Pk, Ph, Jh.

62.1.2 **Buddleja davidii** Franch.; **FMi6** 340, **TFM2** 268, shrub to 2.5 m tall; montane forest margins and clearings; Cameron Highlands, Ph; naturalized ornamental from Central Asia.

62.1.3 **Buddleja madagascariensis** Lam., **FMi6** 340, **TFM2** 268; shrub 2–3 m tall; clearings in hill forest at 700–800 m; Pn, Pk; naturalized from Madagascar.

63. BURSERACEAE

63.1.1 **Canarium apertum** H.J. Lam, **FMi5** 275, **TFM1** 128; large tree to 40 m tall; lowland forest; Ph, NS, Sl.

63.1.2 **Canarium caudatum** King, **FMP1** 370, **FMi5** 259, **TFM1** 129; tree to 18 m tall; lowland forest; widespread.

63.1.3 **Canarium denticulatum** Blume, **FMP1** 374, **FMi5** 272, **TFM1** 129; tree to 20 m tall; lowland and hill forest; Kd, Pk, Sl.

63.1.4 **Canarium grandifolium** (Ridl.) H.J. Lam, **FMi5** 275, **TFM1** 129; *Trigonochlamys grandifolia* Ridl., **FMP1** 381; tree to 35 m tall; Kd, Tg, Pk, Ph, NS, Jh, Sp.

63.1.5 **Canarium hirsutum** Willd., **FMi5** 287, **TFM1** 130; *Canarium hispidum* Blume, **FMP1** 374; *Canarium subcordatum* Ridl., **FMP1** 374; tree 10–25 m tall; lowland forest; one collection each from Pk, Ph, Jh.

63.1.6 **Canarium littorale** Blume, **FMi5** 256, **TFM1** 130; *Canarium purpurascens* Benn., **FMP1** 370; *Canarium rufum* Benn., **FMP1** 372; *Canarium secundum* Benn., **FMP1** 375; tree 10–30 m tall; lowland forest, occasionally in the highlands; throughout.

63.1.7 **Canarium megalanthum** Merr., **FMi5** 274, **TFM1** 131; tree to 40 m tall; lowland forest; Kd, Ph, NS, Jh.

63.1.8 **Canarium patentinervium** Miq., **FMi5** 258, **TFM1** 134; *Canarium nitidum* Benn., **FMP1** 373; *Canarium parvifolium* Benn., **FMP1** 373; ?*Canarium littorale auct. non* Blume, **FMP1** 375; tree to 20 m tall; lowland and hill forest understorey; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

63.1.9 **Canarium perlisanum** Leenh., **FMi5** 258, **TFM1** 134; small tree to 10 m tall; limestone hill at 70 m; known only from type, Kaki Bt, Ps; endemic.

63.1.10 **Canarium pilosum** Benn., **FMP1** 372 incl. var. *hirtellum* (Benn.) Ridl., **FMi5** 281, **TFM1** 134; *Canarium grandiflorum* Benn., **FMP1** 370; tree to 20 m tall; lowland and hill forest to 600 m; widespread.

63.1.11 **Canarium pseudodecumanum** Hochr., **FMi5** 275, **TFM1** 135; buttressed tree to 50 m tall; damp or swampy lowland forest; Kd, Pk, Ph, NS.

63.1.12 **Canarium pseudosumatranum** Leenh., **FMi5** 286, **TFM1** 135; very large tree to 50 m tall; lowland and hill forest; Ps, Kd, Pk, Ph, Sl, NS; endemic.

63.1.13 **Canarium reniforme** Kochummen & Whitmore, **TFM1** 136; small tree to 20 m tall; hill forest, often coastal; Pk, Sl; endemic.

63.1.14 **Canarium sumatranum** Boerl. & Koord., **FMi5** 286, **TFM1** 136; very large tree to 50 m tall; lowland forest, rare; NS.

63.2.1 **Dacryodes breviracemosa** Kalkman, **TFM1** 140; tree to 20 m tall; lowland forest; known only from type, Bt Bauk F.R., Tg; endemic.

63.2.2 **Dacryodes costata** (Benn.) H.J. Lam, **FMi5** 222, **TFM1** 140; *Santiria costata* Benn., **FMP1** 380; tree to 40 m tall; lowland and hill forest; Kd, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp.

63.2.3 **Dacryodes incurvata** (Engl.) H.J. Lam, **FMi5** 224, **TFM1** 140; tree 10–30 m tall; lowland and hill forest including swamps; Kl, Tg, Pk, Ph, Sl, Jh.

63.2.4 **Dacryodes kingii** (Engl.) Kalkman, **FMi5** 224, **TFM1** 141; *Santiria floribunda* King, **FMP1** 376; large shrub or small tree to 12 m tall; lowland forest to 400 m; common throughout; endemic.

63.2.5 **Dacryodes laxa** (Benn.) H.J. Lam, **FMi5** 224, **TFM1** 141; *Santiria laxa* (Benn.) King, **FMP1** 377; tree to 15 m tall; lowland and hill forest; widespread.

63.2.6 **Dacryodes longifolia** (King) H.J. Lam, **FMi5** 228 incl. var. *penangensis* (Ridl.) H.J. Lam, **TFM1** 141; *Santiria longifolia* King, **FMP1** 379; *Curtisina penangensis* Ridl., **FMP1** 491; tree to 35 m tall; hill forest, often coastal; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh; endemic.

63.2.7 **Dacryodes macrocarpa** (King) H.J. Lam, **FMi5** 226, **TFM1** 142; *Santiria macrocarpa* King, **FMP1** 378; tree 10–25 m tall, often stilt-rooted; swampy lowland forest; Pk, Sl, Jh.

63.2.8 **Dacryodes nervosa** (H.J. Lam) Leenh., **TFM3** 142; tree; lowland forest; Trolak Forest Reserve, Pk, Labis F.R., Jh.

63.2.9 **Dacryodes puberula** (Benn.) H.J. Lam, **FMi5** 223, **TFM1** 142; *Santiria fasciculata* Benn. var. *puberula* (Benn.) Ridl., **FMP1** 377; tree 15–21 m tall; lowland and hill forest; Pk, Ph, NS, Ml; endemic.

63.2.10 **Dacryodes rostrata** (Blume) H.J. Lam, **FMi5** 225, **TFM1** 143; *Canarium kadondon* Benn., **FMP1** 373; tree 5–25 m tall; hill forest to 600 m, sometimes in swamps; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

63.2.11 **Dacryodes rubiginosa** (Benn.) H.J. Lam, **FMi5** 225, **TFM1** 143; *Canarium rubiginosum* Benn., **FMP1** 374; tree 20–35 m tall; lowland forest, usually on slopes or ridges; Pk, Ph, Sl, NS, Ml, Jh.

63.2.12 **Dacryodes rugosa** (Blume) H.J. Lam, **FMi5** 221, **TFM1** 144; *Santiria fasciculata* Benn., **FMP1** 377; tree 5–20 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

63.3.1 **Garuga floribunda** Decne., **FMi5** 215, **TFM1** 144; tree about 10 m tall; forest on limestone; once from Gua Jenera, Kl.

63.4.1a **Santiria apiculata** Benn. var. *apiculata*, **FMP1** 378, **FMi5** 234, **TFM1** 146; *Santiria minutiflora* Ridl., **FMP1** 377; tree 6–20 m tall; lowland and hill forest to 1200 m; Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh.

63.4.1b **Santiria apiculata** Benn. var. **rubra** (Ridl.) Kalkman, **FMi5** 234, **TFM1** 146; tree 6-20 m tall; lowland and hill forest; widespread.

63.4.2 **Santiria conferta** Benn., **FMP1** 379, **FMi5** 233, **TFM1** 146; *Santiria wrayi* King, **FMP1** 379; tree 6–24 m tall; lowland forest on slopes, but sometimes in the mountains; not in extreme north.

63.4.3 **Santiria griffithii** (Hook.*f.*) Engl., **FMi5** 236, **TFM1** 147; *Trigonochlamys griffithii* Hook.*f.*, **FMP1** 381; tree 12–35 m tall; lowland forest to 300 m; not in the far north.

63.4.4 **Santiria laevigata** Blume, **FMP1** 378, **FMi5** 232, **TFM1** 147; tree 15–30 m tall; lowland to montane forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

63.4.5 **Santiria nervosa** H.J. Lam, **FMi5** 233; tree 25–30 m tall; lowland forest.

63.4.6 **Santiria oblongifolia** Blume, **FMP1** 379, **FMi5** 233, **TFM1** 150; tree 20–30 m tall; lowland forest; Kd southwards.

63.4.7 **Santiria ridleyi** H.J. Lam, **FMi5** 233, **FMP1** 150; small tree; known only from type, Gg Keladang, Pk; endemic.

63.4.8a **Santiria rubiginosa** Blume var. **nana** (H.J. Lam) Kalkman, **FMi5** 238, **TFM1** 151; tree to 30 m; peat swamp forest; Sl.

63.4.8b **Santiria rubiginosa** Blume var. **rubiginosa**, **FMi5** 237, **TFM1** 151; *Icicaster planchonii* Ridl., **FMP1** 381; tree to 30 m; lowlands to mountains; Kd, Tg, Pk, Ph, Sl, NS, Jh, Sp.

63.4.9 **Santiria tomentosa** Blume, **FMi5** 231, **TFM1** 151; *Santiria multiflora* Benn., **FMP1** 380; tree 15–35 m tall; swampy lowland forest to 250 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

63.5.1 **Scutinanthe brunnea** Thwaites, **FMi5** 247, **TFM1** 152; tree to 30 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, NS, Ml, Jh.

63.6.1 **Triomma malaccensis** Hook.*f.*, **FMP1** 369, **FMi5** 218, **TFM1** 154; very large tree approaching 60 m tall on occasions; lowland forest, a few times at greater altitudes; scattered throughout.

64. BUXACEAE

64.1.1 **Buxus holttumiana** Hatus., **C14** 102; shrub; on limestone; Kaki Bukit, Ps; endemic.

64.1.2 **Buxus malayana** Ridl., **C14** 102; shrub to 4 m tall; limestone hills; Kl, Ph, Pk, Sl; endemic.

64.1.3 **Buxus rupicola** Ridl., **FMP3** 182, **C14** 103; shrub; limestone rocks near the sea; P. Dayang Bunting, Langkawi; endemic.

65. CACTACEAE

65.1.1 **Opuntia monacantha** Haw., **FMP1** 866, **L19** 427; succulent prickly shrub to 2 m tall; dry sandy places, usually near the sea; Jh; naturalized from the New World.

66. CAMPANULACEAE

66.1.1 **Codonopsis lancifolia** (Roxb.) Moeliono, **FMi6** 120; *Campanumoea celebica* Blume, **FMP2** 202; sprawling or erect herb to 3 m tall; on banks in the mountains; Taiping Hills, Pk, and Semangkok Pass, Sl.

66.2.1 **Laurentia longiflora** (L.) Peterm., **FMi6** 140; herb 10–30 cm tall; damp shady places in the lowlands and mountains; widespread; naturalized from the Caribbean.

66.3.1 **Lobelia alsinoides** Lam., **FMi6** 126; *Lobelia griffithii* Hook.*f.* & Thomson, **FMP2** 201; erect herb 3–35 cm tall; marshy grasslands; Chupeng, Ps, ?Sp.

66.3.2 **Lobelia angulata** G. Forst., **FMi6** 133; *Pratia begoniifolia* (Wall.) Lindl., **FMP2** 201; creeping herb to 50 cm long; open or shaded places in the mountains; Pk, Ph, Sl.

66.3.3 **Lobelia chinensis** Lour., **FMi6** 130; herb 5–15 cm tall; damp grassland, weed of cultivation; Sp; naturalized from continental Asia.

66.3.4 **Lobelia montana** Reinw. *ex* Blume, **FMi6** 132; *Pratia montana* (Reinw. *ex* Blume) Hassk., **H35** 108; erect herb 1–2 m tall; open or lightly shaded places in the mountains; Cameron Highlands, Ph.

66.3.5 **Lobelia zeylanica** L., **FMi6** 128; *Lobelia affinis* Wall. *ex* G. Don, **FMP2** 200; creeping or ascending herb 20–90 cm tall; lowland and hill forest; Pn, Pk, Sl, Ml, Jh, Sp.

66.4.1 **Sphenoclea zeylanica** Gaertn., **FMP2** 204, **FMi4** 27; fleshy herb to 150 cm tall; ditches, swamps and ricefields; Ps, Kd, Pn.

67. CAPPARACEAE

67.1.1 **Capparis cucurbitina** King, **FMP1** 124, **FMi6** 85, **J01** 446; climber or scandent shrub 6–10 m high; lowland forest to 200 m; Pk; endemic.

67.1.2 **Capparis diffusa** Ridl., **FMP1** 122, **FMi6** 81, **J01** 447, **C14** 103; shrub or woody climber; on limestone rocks; Ps, P. Langkawi, Pk, Ph.

67.1.3 **Capparis erycibe** Hallier *f.*, **FMi6** 75, **J01** 449; *Capparis paniculata* Ridl., **FMP1** 124; woody climber; lowland forest, also on limestone; Kl, Ph.

67.1.4a **Capparis micracantha** DC. ssp. **korthalsiana** (Miq.) M. Jacobs, **FMi6** 86, **J01** 471; *Capparis finlaysoniana* Wall. *ex* Hook.*f.* & Thomson, **FMP1** 124; shrub or small tree to 6 m tall, rarely climbing; lowland forest; Pk, Ph, Jh, Sp.

67.1.4b **Capparis micracantha** DC. ssp. **micracantha**, **FMP1** 123, **FMi6** 85, **J01** 467; shrub or small tree 2–6 m tall; lowland forest, sea shore; widespread, mostly in the north.

67.1.5 **Capparis pubiflora** DC., **FMi6** 82, **J01** 479; *Capparis perakensis* (Scort. *ex* King) Ridl., **FMP1** 124; shrub 2–5 m tall; damp lowland forest; Kl, Pk, Ph, Sl.

67.1.6 **Capparis scortechinii** King, **FMP1** 122, **FMi6** 71, **J01** 488; climbing shrub reaching 2–10 m; hill forest; Tg, Pn, Pk, Ph, Sl.

67.1.7 **Capparis sepiaria** L., **FMP1** 122, **FMi6** 79, **J01** 489; shrub 1–3 m tall, occasionally climbing; scrubby vegetation; Kd, Kl.

67.1.8 **Capparis trinervia** Hook.*f.* & Thomson, **FMi6** 73, **J01** 500; *Capparis kunstleri* King, **FMP1** 122; shrub or climber to 4 m tall; hill forest; Gg Bubu, Pk.

67.1.9 **Capparis versicolor** Griff., **J01** 501; *Capparis larutensis* King, **FMP1** 122, **FMI6** 89; woody climber reaching 10–13 m; lowland forest below 200 m; Pk, Sl.

67.2.1 **Cleome aculeata** L., **FMP1** 120, **FMi6** 104; erect herb to 50 cm tall; weed of cultivation; Sp; naturalized from tropical America.

67.2.2 **Cleome gynandra** L., **FMi6** 101; *Gynandropsis pentaphylla* DC., *nom. illeg.*, **FMP1** 120; *Gynandropsis gynandra* (L.) Briq., **N11** 79; erect herb 15-80 cm tall; weed of cultivation, waste places to 500 m; throughout.

67.2.3 **Cleome rutidosperma** DC., **FMi6** 104, **M47** 122; *Cleome ciliata* Schumach. & Thonn., **M31** 132; herb to 1 m tall; weed, waste places; throughout; naturalized from tropical Africa.

67.2.4 **Cleome viscosa** L., **FMP1** 119, **FMi6** 103, **M47** 124; sticky stinking herb to 1 m tall; waste ground; common throughout; naturalized from mainland Asia.

67.3.1 **Crateva hygrophila** Kurz, **FMi6** 69, **TFM2** 26; small tree; once from Pn; poorly known species.

67.3.2 **Crateva magna** (Lour.) DC., **TFM2** 26; *Crateva religiosa* (*non* G. Forst.) Blume, **FMP1** 125; *Crateva nurvala* Buch.-Ham., **FMi6** 68; tree 10–15 m tall; in forest along streams to 600 m; Kd, Kl, Tg, Pk, Ph.

67.3.3 **Crateva religiosa** G. Forst., **FMi6** 65, **TFM2** 26; *Crateva macrocarpa* Kurz, **FMP1** 125; tree 5–10 m tall; lowlands; Ps, Kd, Pk, Ph, Sl, Ml, Jh.

67.4.1 **Stixis scortechinii** (King) M. Jacobs, **FMi6** 99; *Roydsia parviflora* (*non* Griff.) King, **FMP1** 120; *Roydsia scortechinii* King, **FMP1** 121; shrub or climber reaching 3–4 m; dry sunny places to 1200 m; Pn, Pk, Ph, Sl, NS.

68. CAPRIFOLIACEAE

68.1.1 **Lonicera malayana** M.R. Hend., **FMP5** 313, **FMi4** 178, **TFM4** 66; woody climber; scrambling over bushes near mountain streams, 1000 m and above; Cameron Highlands, Ph, and Genting Highlands, Sl.

68.2.1 **Viburnum beccarii** Gamble, **FMP2** 2, **FMi4** 183, **TFM4** 67; climbing or scrambling shrub to 3 m tall; montane forest above 1100 m; Pk, Ph, Sl.

68.2.2 **Viburnum lutescens** Blume, **FMP2** 2, **FMi4** 188, **TFM4** 67; small tree to 8 m tall; hill and lower montane forest at 500–1200 m; Pk, Ph, Sl.

68.2.3a **Viburnum sambucinum** Blume var. **sambucinum**, **FMP2** 1, **FMi4** 186 incl. var. *subglabrum* Kern, **TFM4** 67; *Viburnum longistamineum* Ridl., **FMP2** 2; shrub or small tree to 10 m tall; hill and montane forest; Kd, Tg, Pn, Pk, Sl, Sp.

68.2.3b **Viburnum sambucinum** Blume var. **tomentosum** Hallier *f.*, **FMI4** 186, **TFM4** 68; *Viburnum villosum* Ridl., **FMP2** 2; small tree to 10 m tall; hill forest at about 800 m; Bt Kutu, Sl.

68.2.4 **Viburnum sp., TFM4** 68; shrub; on limestone; once collected at Bertam, Kl; ?endemic.

69. CARDIOPTERIDACEAE

69.1.1 **Cardiopteris quinqueloba** (Hassk.) Hassk., **FMI7** 95; *Cardiopteris lobata* R.Br., *nom. illeg.*, **FMP2** 464; twining vine 2–5 m long; lowland forest to 1000 m; Ps, Kd, Pk, Ph.

70. CARYOPHYLLACEAE

70.1.1 **Cerastium glomeratum** Thuill., **S65** 107; slender herb to 15 cm tall; garden weed; Genting Highlands, Ph; naturalized from Europe.

70.2.1 **Drymaria cordata** (L.) Willd. *ex* Roem. & Schult., **FMP1** 150; small diffuse herb; roadsides, wasteground in lowlands and mountains; widespread; naturalized from tropical America.

70.3.1 **Sagina procumbens** L., **S65** 106; tiny tufted herb; banks and drains; Genting Highlands, Ph; naturalized from Europe.

70.4.1 **Stellaria media** (L.) Vill., **FMP5** 288, **S65** 106; herb to 30 cm tall; weed at the hill resorts; Pk, Ph; naturalized from Europe.

70.4.2 **Stellaria uliginosa** L., **FMP5** 289; slender creeping herb ascending to 15 cm; banks and verges in the mountains; Fraser's Hill, Ph; naturalized from temperate Asia.

71. CASUARINACEAE

71.1.1 **Casuarina equisetifolia** J.R. Forst. & G. Forst., **FMP3** 372, **TFM3** 46; tree to 50 m tall; sandy coasts; P. Langkawi and along the East Coast.

72. CECROPIACEAE

72.1.1 **Cecropia peltata** L., **K09** 67; small tree; disturbed lowland forest; Sl, Sp; naturalized from the Neotropics.

72.2.1 **Poikilospermum cordifolium** (Barg.-Petr.) Merr., **C06** 66; *Conocephalus amoenus auct. non* King *ex* Hook.*f*., **FMP3** 357 in part; hemi-epiphyte; along streams in the lowlands; Kl, Tg, Pk, Ph, Sl, Jh, Sp.

72.2.2 **Poikilospermum microstachys** (Barg.-Petr.) Merr., **C06** 72; *Conocephalus subtrinervius* Miq. *sensu* Hook.*f*., **FMP3** 358; hemi-epiphyte; along rivers or in swamp forest; Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

72.2.3 **Poikilospermum scortechinii** (King) Merr., **C06** 84; *Conocephalus scortechinii* King, **FMP3** 357; hemi-epiphyte; lowland forest to 300 m, near water courses and swamps; Pk, Sl, Jh.

72.2.4 **Poikilopsermum suaveolens** (Blume) Merr., **C06** 88; *Conocephalus suaveolens* Blume, **FMP3** 357; *Conocephalus amoenus* King, **FMP3** 357 in part; hemi-epiphyte; along water courses in forest to 1500 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

73. CELASTRACEAE

73.1.1 **Arnicratea ferruginea** (King) N. Hallé, **H02** 16; *Hippocratea ferruginea* King, **FMP1** 455; *Reissantia ferruginea* (King) Ding Hou, **FMi6** 402; liana reaching to 20 m; lowland forest to 450 m; Pn.

73.2.1 **Bhesa indica** (Bedd.) Ding Hou, **FMi6** 283, **TFM1** 160; tree to 20 m tall; rare in hill forest; Kd, Sl, Ml.

73.2.2 **Bhesa paniculata** Arn., **FMi6** 282, **TFM1** 160; *Kurrimia paniculata* Wall. *ex* Arn., **FMP1** 452; tree to 35 m tall; lowland and montane forest to 1300 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh, Sp.

73.2.3 **Bhesa robusta** (Roxb.) Ding Hou, **FMi6** 283, **TFM1** 161; *Kurrimia pulcherrima* Wall. *ex* Laws., **FMP1** 452; tree to 40 m tall; lowland and hill forest; Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml, Sp.

73.3.1 **Cassine viburnifolia** (Juss.) Ding Hou, **FMi6** 286; *Elaeodendron subrotundum* King, **FMP1** 453; shrub or small tree to 10 m tall; near the sea, in mangroves; Kd, Pk, Sl, Jh, Sp.

73.4.1 **Celastrus monospermoides** Loes., **FMi6** 236; *Celastrus malayensis* Ridl., **FMP1** 451; scandent shrub or woody climber to 17 m tall; hill forest; widespread.

73.4.2 **Celastrus paniculatus** Willd., **FMP1** 451, **FMi6** 235; scandent shrub to 10 m tall; open country in the hills; scattered.

73.5.1 **Euonymus cochinchinensis** Pierre, **FMi6** 248, **TFM1** 162; *Glyptopetalum scortechinii* King, **FMP1** 447; *Euonymus pahangensis* Ridl., **FMP5** 299; small tree to 12 m tall; lowland and hill forest to 1300 m; Pk, Ph.

73.5.2 **Euonymus glaber** Roxb., **FMi6** 250, **TFM1** 162; *Lophopetalum pedunculatum* Ridl., **FMP1** 449; small tree to 5 m tall; lowlands; twice collected in Ps.

73.5.3 **Euonymus javanicus** Blume, **FMP1** 445, **FMi6** 248, **TFM1** 162; *Euonymus coriaceus* Ridl., **FMP5** 299; *Euonymus micropetalus* Ridl., **FMP5** 299; tree to 23 m tall; lowland and hill forest to 400 m; widespread.

73.5.4 **Euonymus wrayi** King, **FMP1** 446, **FMi6** 250, **TFM1** 162; *Euonymus rufulus* Ridl., **FMP1** 446; shrub or small tree to 5 m tall; montane forest; Kd, Tg, Pk, Ph, Sl.

73.6.1 **Glyptopetalum quadrangulare** Prain *ex*. King, **FMP1** 446, **FMi6** 257, **TFM1** 162; shrub or small tree to 5 m; lowland forest to 600 m; widespread.

73.6.2 **Glyptopetalum zeylanicum** Thwaites var. **brevipedicellatum** Ding Hou, **FMi6** 257, **TFM1** 162; small bushy tree; on limestone; variety only known from type, Kota Glanggi, Ph; endemic variety.

73.7.1 **Kokoona coriacea** King, **FMi6** 261, **TFM1** 164; *Lophopetalum coriacea* (King) Ridl., **FMP1** 450; tree 9–12 m tall; lowland forest; known only from type, Larut, Pk; endemic.

73.7.2 **Kokoona littoralis** Laws., **FMi6** 261, **TFM1** 164; *Lophopetalum dubium* Laws., **FMP1** 450; *Lophopetalum littoralis* (Laws.) Ridl., **FMP1** 450; *Lophopetalum maingayi* Ridl., **FMP1** 450; unbuttressed tree to 30 m tall; lowland and hill forest to 800 m; Kd, Tg, Ph, Sl, Jh.

73.7.3 **Kokoona ochracea** (Elmer) Merr., **FMi6** 260, **TFM1** 164; buttressed tree 25–40 m tall; lowland and hill forest to 800 m; Pk, Sl, NS, Jh.

73.7.4 **Kokoona reflexa** (Laws.) Ding Hou, **FMi6** 262, **TFM1** 164; *Lophopetalum reflexa* Laws., **FMP1** 449; magnificent buttressed tree to 48 m tall; lowland forest, frequent on ridges; Kd, Pk, Sl, Sp.

73.7.5 **Kokoona sessilis** Ding Hou, **FMi6** 261, **TFM1** 165; tree to 30 m tall with small buttresses; lowland forest; Kl, Tg, Jh; endemic.

73.8.1 **Loeseneriella cumingii** Laws., **FMi6** 399; scandent shrub; lowland forest; Sl, Ml.

73.8.2 **Loeseneriella macrantha** (Korth.) A.C. Sm., **FMi6** 398; *Hippocratea macrantha* Korth., **FMP1** 455; liana; lowland forest to 400 m, often near rivers, also in mangrove; Pk, Ph, Sl, Jh, Sp.

73.8.3 **Loeseneriella pauciflora** (DC.) A.C. Sm., **FMi6** 400; *Hippocratea nigricaulis* Ridl., **FMP1** 455; *Salacia perakensis* King, **FMP1** 457; shrub, more frequently liana; lowland forest to 840 m, also on limestone; Ps, Kl, Tg, Pn, Pk, Ph, Sl.

73.9.1 **Lophopetalum beccarianum** Pierre, **FMi6** 266, **TFM1** 165; *Lophopetalum scortechinii* King, **FMP1** 448; tree to 30 m tall; lowland forest; twice collected from Pk.

73.9.2 **Lophopetalum floribundum** Wight, **FMi6** 266, **TFM1** 167; unbuttressed tree to 25 m tall; lowland forest to 360 m; Kl, Pn, Pk, Ph, NS, Jh.

73.9.3 **Lophopetalum javanicum** (Zoll.) Turcz., **FMi6** 268, **TFM1** 168; *Lophopetalum fuscescens* Kurz, **FMP1** 448; *Lophopetalum oblongum* King, **FMP1** 448; *Lophopetalum intermedium* Ridl., **FMP1** 449; *Lophopetalum oblongifolium* King, **FMP1** 449; tree to 20 m tall; lowland forest, often near streams or in swamps; Kd, Tg, Pn, Pk, Ph, Jh.

73.9.4 **Lophopetalum multinervium** Ridl., **FMi6** 270, **TFM1** 168; tree to 35 m, often with short columnar pneumatophores; peat swamp forest; Pk, Ph, Jh, Sp.

73.9.5 **Lophopetalum pachyphyllum** King, **FMP1** 448, **FMi6** 267, **TFM1** 168; buttressed tree to 36 m tall; lowland forest to 400 m, usually on slopes; Kd, Pk, Sl, NS, Jh.

73.9.6 **Lophopetalum pallidum** Laws., **FMP1** 449 incl. var. *curtisii* (King) Ridl., **FMi6** 268, **TFM1** 168; tree to 45 m tall, sometimes buttressed; lowland forest to 300 m, usually on hill slopes; Kd, Pn, Sl, NS, Ml, Jh.

73.9.7 **Lophopetalum subobovatum** King, **FMP1** 448, **FMi6** 272, **TFM1** 169; buttressed tree to 30 m tall; lowland forest to 400 m; Tg, Pn, Ph, Jh.

73.9.8 **Lophopetalum wightianum** Arn., **FMi6** 267, **TFM1** 169; *Lophopetalum fimbriatum* Wight, **FMP1** 448; buttressed tree to 45 m tall; hill forest near the sea; Ps, Kd, Pn, Sl, NS, Ml, Sp.

73.10.1 **Maytenus curtisii** (King) Ding Hou, **FMi6** 240, **TFM1** 170; *Gymnosporia curtisii* King, **FMP1** 451; shrub or small tree; on limestone; Ps, P. Langkawi.

73.10.2 **Maytenus emarginata** (Willd.) Ding Hou, **FMi6** 241, **TFM1** 170; spiny shrub 2–4 m tall; mangroves or sea shore; Jh, Sp.

73.11.1 **Microtropis bivalvis** (Jack) Wall., **FMP1** 444, **FMi6** 276, **TFM1** 170; *Microtropis filiformis* King, **FMP1** 444; *Microtropis peduncularis* Ridl., **FMP5** 298; shrub or small tree to 7 m tall; lowland to montane forest, 300–1800 m; Kd, Kl, Tg, Pn, Pk, Ph, Sl.

73.11.2 **Microtropis discolor** (Wall.) Wall., **FMP1** 444, **FMi6** 275, **TFM1** 170; shrub or small tree; hill forest at 600 m; Penang Hill.

73.11.3 **Microtropis elliptica** King, **FMP1** 444, **FMi6** 277, **TFM1** 170; *Microtropis ophirensis* Ridl., **FMP1** 444; shrub or small tree to 15 m tall; mostly lowland forest; Tg, Pn, Pk, Ph, Ml, Jh.

73.11.4 **Microtropis tenuis** Symington, **FMi6** 275, **TFM1** 170; small tree; hill forest at 750 m; only known from type, Gg Tapis, Ph; endemic.

73.11.5 **Microtropis valida** Ridl., **FMP1** 445, **FMi6** 276, **TFM1** 170; shrub or small tree to 5 m tall; lowland to montane forest; Pk, Ph, Jh.

73.12.1 **Perrottetia alpestris** (Blume) Loes., **FMP1** 454, **FMi6** 290, **TFM1** 171; shrub or small tree to 8 m tall; common in montane forest above 900 m; widespread.

73.13.1 **Pleurostylia opposita** (Wall.) Alston, **FMi6** 288, **TFM1** 171 '*Pleurostylis*'; *Pleurostylia wightii* Wight & Arn., **FMP1** 453 '*Pleurostylis*'; tree to 15 m tall; coastal; P. Langkawi, Pn.

73.14.1 **Reissantia indica** (Willd.) N. Hallé, **FMi6** 401; *Hippocratea indica* Willd., **FMP1** 455; liana, sometimes shrubby; lowland forest to 650 m; Ps, Pn, Ph, Sp.

73.15.1 **Salacia chinensis** L., **FMi6** 419; *Salacia prinoides* DC., **FMP1** 459; *Salacia latifolia* Wall. *ex* Laws., **FMP1** 459; liana, scandent shrub or occasionally small tree; lowland forest to 450 m; widespread.

73.15.2 **Salacia euphlebia** Merr., **FMi6** 418; scandent shrub; lowland forest to 150 m; Pk, Sl.

73.15.3 **Salacia exsculpta** Korth., **FMi6** 417; *Salacia rubra* Laws., **FMP1** 460; *Salacia wrayi* King, **FMP1** 460; liana; lowland and hill forest to 1000 m; Pn, Pk, Ml, Sp.

73.15.4 **Salacia grandiflora** Kurz, **FMP1** 458, **FMi6** 413; *Salacia scortechinii* King, **FMP1** 457; *Maba hierniana* King & Gamble, **FMP2** 279; liana or scandent shrub, more rarely small tree; lowland forest to 750 m; widespread.

73.15.5 **Salacia korthalsiana** Miq., **FMP1** 457, **FMi6** 406; *Hippocratea obtusa* Ridl., **FMP5** 299; liana to 18 m long, sometimes shrubby; forest margins; Ph, Jh, Sp.

73.15.6 **Salacia macrophylla** Blume, **FMi6** 412; *Salacia flavescens* Kurz, **FMP1** 459; *Salacia prinoides* DC. var. *macrophylla* (Blume) King, **FMP1** 459; liana sometimes shrubby; lowland and hill forest to 1200 m, also in open country; widespread.

73.15.7 **Salacia maingayi** Laws., **FMP1** 461, **FMi6** 417; shrubby creeper; lowland forest to 300 m; Pn, Pk, Ml, Sp.

73.15.8 **Salacia oblongifolia** Blume, **FMi6** 408; *Salacia campanuloidea* King, **FMP1** 457; liane reaching to 30 m high; lowland and hill forest to 1000 m, in swamps also; Pn, Pk, Jh.

73.15.9 **Salacia verrucosa** Wight, **FMP1** 459, **FMi6** 414; *Salacia kunstleri* King, **FMP1** 460; liana, sometimes shrub or small tree to 6 m tall; lowland and hill forest; P. Langkawi, Kl, Pk, Ph.

73.15.10 **Salacia viminea** Wall *ex* Laws., **FMP1** 456, **FMi6** 418; scandent shrub; lowland forest; Tg, Pk, Ph, Sp.

73.16.1 **Siphonodon celastrineus** Griff., **FMi6** 394; **TFM1** 171; tree to 35 m tall; lowland and hill forest; Pn and Ulu Langat, Sl.

74. CHLORANTHACEAE

74.1.1 **Chloranthus erectus** (Buch.-Ham.) Verdc., **FMi10** 131; *Chloranthus officinalis* Blume, **FMP3** 52; shrub to 3 m tall; lowland and hill forest; Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

74.2.1 **Sarcandra glabra** (Thunb.) Nakai ssp. **brachystachys** (Blume) Verdc., **FMi10** 136; *Chloranthus brachystachys* Blume, **FMP3** 53; shrub 0.6–3 m tall; hill and montane forest; Pn, Pk, Ph, Sl.

75. CHRYSOBALANACEAE

75.1.1 **Atuna latifrons** (Kosterm.) Prance & F. White, **FMi10** 666; *Parinarium latifolium* (*non* Exell) M.R. Hend., **H35** 102; *Atuna latifolia* (M.R. Hend.) Kosterm. *nom. inval.*; **TFM2** 324; shrub to 5 m tall; only known from type; Kd/Pk border; endemic.

75.1.2 **Atuna nannodes** (Kosterm.) Kosterm., **TFM2** 325, **FMi10** 667; tree to 20 m tall; lowland and hill forest to 750 m; Pn, Tg, Pk, Ph, NS, Jh.

75.1.3 **Atuna penangiana** (Kosterm.) Kosterm., **TFM2** 326, **FMi10** 667; tree to 20 m tall; lowland and hill forest to 600 m; Pn, Kl, Tg, Pk, Jh; endemic.

75.1.4a **Atuna racemosa** Raf. ssp. **excelsa** (Jack) Prance, **FMi10** 670; *Parinarium maingayi* King, **FMP1** 669; *Parinarium spicatum* King, **FMP1** 669; *Parinarium asperulum* Miq., **FMP1** 670; *Atuna excelsa* (Jack) Kosterm., **TFM2** 324; tree to 45 m tall; lowland and hill forest to 750 m; Kd and Tg southward.

75.1.4b **Atuna racemosa** Raf. ssp. **racemosa**, **FMi10** 669; *Parinarium elatum* King, **FMP1** 669; *Parinarium scabrum* Hassk., **FMP1** 669; *Atuna elata* (King) Kosterm., **TFM2** 324; tree to 45 m tall; lowland and hill forest to 600 m; Pk (thrice).

75.2.1 **Chrysobalanus icaco** L., **FMi10** 643; shrub to 5 m tall; coastal scrub; St John's Island, Sp; naturalized from tropical America.

75.3.1 **Kostermanthus heteropetalus** (Scort. *ex* King) Prance, **TFM2** 328, **FMi10** 677; *Parinarium heteropetalum* Scort. *ex* King, **FMP1** 670; *Parinarium kunstleri* King, **FMP1** 670; tree to 36 m tall, lowland forest; Pk, Jh.

75.3.2 **Kostermanthus malayanus** (Kosterm.) Prance, **FMi10** 677; tree to 10 m tall; known only from type; Pn; endemic.

75.4.1 **Licania splendens** (Korth.) Prance, **TFM2** 329, **FMi10** 646; *Coccomelia nitida* (Hook.*f.*) Ridl., **FMP1** 671; tree to 15 m tall; lowland forest; throughout.

75.5.1 **Maranthes corymbosa** Blume, **TFM2** 330, **FMi10** 673; *Parinarium griffithianum* Benth., **FMP1** 670; tree to 39 m tall; mostly coastal, but also in the mountains; Ps, Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

75.6.1 **Parastemon urophyllus** (Wall. *ex* A. DC.) A. DC., **FMP1** 672, **TFM2** 331, **FMi10** 649; tree to 36 m tall; lowland forest; throughout.

75.7.1a **Parinari costata** (Korth.) Blume ssp. **costata**, **FMP1** 666, **TFM2** 333, **FMi10** 663; tree to 50 m tall; lowland forest; only absent from far north.

75.7.1b **Parinari costata** (Korth.) Blume ssp. **polyneura** (Miq.) Prance, **FMi10** 664; *Parinari polyneura* Miq., **FMP1** 668, **TFM2** 336; tree to 24 m tall; lowland forest; Kd, Kl, Ph, Sl.

75.7.1c **Parinari costata** (Korth.) Blume ssp. **rubiginosa**, (Ridl.) Prance; **FMi10** 663; *Parinari rubiginosa* Ridl., **FMP1** 668, **TFM2** 336; tree to 36 m tall; lower montane forest at 750–1500 m; Kl, Pk, Ph, Jh.

75.7.2 **Parinari elmeri** Merr., **TFM2** 335, **FMi10** 657; tree to 32 m tall; lowland and hill forest to 600 m; Sl, Ml, Jh.

75.7.3 **Parinari oblongifolia** Hook.*f.*, **FMP1** 668, **TFM2** 335, **FMi10** 659; tree to 40 m tall; lowland forest; Kl to Jh.

75.7.4 **Parinari parva** Kosterm., **TFM2** 335, **FMi10** 657; tree to 15 m tall; lowland and hill forest, often on ridges; Kl, Tg, Ph, Jh.

75.7.5 **Parinari rigida** Kosterm., **TFM2** 336, **FMi10** 660; tree to 30 m tall; lowland forest, sometimes swamps; Kl, Tg, Ph, NS, Jh, Sp.

76. CLETHRACEAE

76.1.1 **Clethra hendersonii** Sleumer, **FMi7** 143, **TFM2** 27; *Clethra canescens auct. non* Reinw. *ex* Blume, **FMP2** 222; small tree to 8 m tall; montane forest at 1340–1740 m; Cameron Highlands and Gg Tahan, Ph, and Gg Nuang, Sl; endemic.

76.1.2 **Clethra symingtonii** Sleumer, **FMi7** 144, **TFM2** 27; shrub; exposed mountain ridge at 1830 m; known only from type, Gg Korbu, Pk; endemic.

77. COMBRETACEAE

77.1.1 **Combretum acuminatum** Roxb., **FMP1** 708, **FMi4** 538; scandent shrub; lowland forest; north of Malaya.

77.1.2 **Combretum latifolium** Blume, **FMi4** 542; *Combretum extensum* Roxb. *ex* Don, **FMP1** 709; scandent shrub or liana reaching to 30 m; lowland forest; scattered.

77.1.3 **Combretum nigrescens** King, **FMP1** 710 incl. var. *kunstleri* (King) Ridl., **FMi4** 538; *Combretum scortechinii* King, **FMP1** 710; woody climber 10–20 m long; lowland forest; quite widespread.

77.1.4 **Combretum perakense** M.G. Gangop. & Chakrab., **G03** 687; scandent shrub; lowland forest; Pk, Sl; endemic.

77.1.5 **Combretum porterianum** (C.B. Clarke) Wall. *ex* Craib, **FMi4** 540; *Combretum chinense* Roxb. var. *porterianum* C.B. Clarke, **FMP1** 709; scandent shrub; forest margins, limestone cliffs; Pn, Ph.

77.1.6 **Combretum punctatum** Blume ssp. **squamosum** (Roxb. *ex* Don) Exell, **FMi4** 539; *Combretum squamosum* Roxb. *ex* Don, **FMP1** 709; scandent shrub or liana; lowland primary and secondary forest; scattered.

77.1.7 **Combretum sundaicum** Miq., **FMP1** 708, **FMi4** 542; scandent shrub or liana to 30 m long; lowland forest to 250 m; widespread.

77.1.8 **Combretum tetralophum** C.B. Clarke, **FMP1** 708, **FMi4** 541; *Combretum wrayi* King, **FMP1** 710; scandent shrub or large liana; mangroves and riverside forest; scattered.

77.1.9 **Combretum trifoliatum** Vent., **FMP1** 708, **FMi4** 537; climbing or scrambling shrub 2–5 m tall; along river banks or in seasonally flooded forest; Ps.

77.1.10 **Combretum yunnanense** Exell, **FMi4** 540; *Combretum chinense* Roxb. var. *pubescens* King, **FMP1** 709; scandent shrub or large climber; poorly known.

77.2.1 **Getonia floribunda** Roxb., **FMi4** 584 in synonymy; *Calycopteris floribunda* (Roxb.) Lam., **FMP1** 706, **FMi4** 584, **TFM1** 172; scrambling shrub; lowland forest; P. Langkawi, Pn, Ph.

77.3.1 **Lumnitzera littorea** (Jack) Voigt, **FMi4** 586, **TFM1** 174; *Lumnitzera coccinea* Wight & Arn., **FMP1** 707; red-flowered tree to 30 m with kneed pneumatophores; back mangroves, sandy shores; all coasts.

77.3.2 **Lumnitzera racemosa** Willd., **FMP1** 707, **FMi4** 589, **TFM1** 173; white-flowered tree to 8 m tall without pneumatophores; mangroves; all coasts but commoner on the East.

77.4.1 **Quisqualis conferta** (Jack) Exell, **FMi4** 545; *Quisqualis densiflora* Wall. *ex* Miq., **FMP1** 711; woody climber; lowland forest; widespread.

77.4.2 **Quisqualis indica** L., **FMP1** 711, **FMi4** 547; woody climber; forest margins, riverbanks, often cultivated; possibly wild in the north.

77.4.3 **Quisqualis parvifolia** (Ridl.) Exell, **FMi4** 545; *Quisqualis densiflora* var. *parvifolia* Ridl., **FMP1** 711; woody climber, P. Langkawi.

77.5.1 **Terminalia bellirica** (Gaertn.) Roxb., **FMP1** 704 '*belerica*', **FMi4** 569, **TFM1** 175; tree to 25m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, NS.

77.5.2 **Terminalia calamansanai** (Blanco) Rolfe, **FMi4** 556, **TFM1** 175; *Terminalia bialata* (*non* Steud.) King, **FMP1** 705; tree to 30 m tall; lowland forest; Ps, P. Langkawi, Kd.

77.5.3 **Terminalia catappa** L., **FMP1** 705, **FMi4** 566, **TFM1** 176; pagoda tree 10–35 m tall; sandy and rocky shores, widely planted shade tree; all coasts.

77.5.4 **Terminalia citrina** (Gaertn.) Roxb. *ex* Fleming, **FMP1** 703 incl. var. *malayana* C.B. Clarke, **FMi4** 555, **TFM1** 176; spreading tree 20–30 m tall; lowland forest; widespread.

77.5.5 **Terminalia foetidissima** Griff., **FMP1** 704, **FMi4** 577, **TFM1** 176; tree to 30 m tall; lowland forest; Sl, NS, Ml.

77.5.6 **Terminalia phellocarpa** King, **FMP1** 705, **FMi4** 579, **TFM1** 178; tree to 30 m tall; swampy or alluvial forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

77.5.7 **Terminalia subspathulata** King, **FMP1** 705, **FMi4** 558, **TFM1** 178; large tree to 45 m tall; lowland forest; Pk southwards.

77.5.8 **Terminalia triptera** Stapf, **FMP1** 706, **FMi4** 554, **TFM1** 178; small tree 3–10 m tall; low open forests on limestone, quartzite or shale; P. Langkawi, mainland Kd.

78. COMPOSITAE

78.1.1 **Acanthospermum australe** (Loefl.) Kuntze, **K09** 166; *Acanthospermum brasilium* Schrank, **FMP2** 181; prostrate herb; weed in and about towns; Sp; naturalized from tropical America.

78.2.1 **Acmella paniculata** (Wall. *ex* DC.) R.K. Jansen, **J05** 67; *Spilanthes paniculata* Wall. *ex* DC., **M47** 104; herb; moist grassy places, roadsides; Pn, Kl, Pk, Ph, Ml, Sp.

78.2.2 **Acmella uliginosa** (Sw.) Cass., **S31** 287, **J05** 55; *Spilanthes acmella* (*non* L.) Murr., **FMP2** 184; *Spilanthes iabadicensis* A.H. Moore, **G20** 221, **M47** 102; herb to 40 cm tall; common weed; throughout.

78.3.1 **Adenostemma viscosum** J.R. Forst. & G. Forst., **FMP2** 182, **S28** 292; *Adenostemma lavenia auctt., non* (L.) Kuntze, **G20** 139; herb to 60 cm tall; damp waste ground; widespread.

78.4.1 **Ageratum conyzoides** L., **FMP2** 182, **J18** 26, **S31** 296, **M47** 60; herb to 1 m tall; weed of cultivation, waste ground; naturalized from tropical America.

78.5.1 **Ainsliaea latifolia** (D. Don) Sch.Bip. ssp. **henryi** (Diels) H. Koyama, **K64** 60; *Ainsliaea reflexa* Merr., **H35** 108; herb; once from the Cameron Highlands, Ph.

78.6.1 **Bidens pilosa** L., **FMP2** 183, **G20** 227, **M47** 64, **S31** 281; erect herb to 50 cm tall; open damp spots; widespread.

78.7.1 **Blumea balsamifera** (L.) DC., **FMP2** 192, **R03** 237; shrub to 4 m tall; open places, lowlands and hills; widespread.

78.7.2 **Blumea clarkei** Hook.*f.*, **R03** 252; herb to 2 m tall; in the hills.

78.7.3 **Blumea densiflora** DC., **R03**; herb to 1.8 m tall; hill forest; Wallich type from Pn, ? wrongly localised.

78.7.4 **Blumea junghuhnii** (Miq.) Boerl., **R03** 235; shrub; mostly in the hills; scattered.

78.7.5 **Blumea lacera** (Burm.*f.*) DC., **FMP2** 193, **R03** 264, **M47** 66; herb to 1 m tall; common roadside weed; widespread.

78.7.6 **Blumea membranacea** DC., **FMP2** 193, **R03** 269; herb to 1.5 m tall; open places; widespread.

78.7.7 **Blumea napifolia** DC., **R03** 269; herb to 70 cm tall; open grassy areas.

78.7.8 **Blumea riparia** (Blume) DC., **R03** 213; *Blumea chinensis* DC., **FMP2** 192 incl. var. *riparia* King; scandent shrub; open places, often near streams; widespread.

78.7.9 **Blumea sinuata** (Lour.) Merr., **F15** 25; *Blumea laciniata* (Roxb.) DC., **R03** 258; herb to 1.8 m tall; roadsides and clearings in the lowlands and hills.

78.7.10 **Blumea virens** DC., **R03** 272; herb to 1.8 m tall; dry open places; once collected, location uncertain.

78.8.1 **Centipeda minima** (L.) A. Braun & Asch., **G20** 235, **M47** 70, **S31** 314; *Centipeda orbicularis* Lour., **FMP2** 195; small prostrate herb; waste ground, paddy-fields; widespread.

78.9.1 **Chromolaena odorata** (L.) R.M. King & H. Rob., **K51** 204, **F15** 25; *Eupatorium odoratum* L., **V14** 478, **G20** 143, **M47** 86; erect or sprawling herb; forest margins and clearings; widespread; naturalized from tropical America.

78.10.1 **Complaya chinensis** (L.) Strother, **S71** 14; *Wedelia chinensis* (L.) Merr., **G20** 215, **V21** 400, **N11** 69; creeping herb; damp places near the sea; once from Tg.

78.10.2 **Complaya trilobata** (L.) Strother, **S71** 14; *Wedelia trilobata* (L.) Hitch., **K09** 171, **F15** 61; creeping herb; waste ground; Sp; naturalized from tropical America.

78.11.1 **Conyza bonariensis** (L.) Cronquist, **G20** 158, **S31** 307; *Erigeron sumatrensis* Retz., **FMP2** 196, **M47** 84; *Conyza floribunda* Kunth, **G20** 157; herb to 2 m tall; clearings and waste ground; widespread.

78.11.2 *Erigeron oreophilus* (*non* Greenm.) Ridl., **FMP2** 196 '*oreophilum*'; herb to 50 cm tall; Gg Kerbau, Pk only known from type; endemic.

78.12.1 **Crassocephalum crepidioides** (Benth.) S. Moore, **G20** 248, **C26** 661, **M47** 72, **S31** 317; herb to 50 cm tall; weed of cultivation; Sp; naturalized from tropical Africa.

78.13.1 **Dichrocephala integrifolia** (L.*f.*) Kuntze, **G20** 149, **M47** 74, **S31** 300; *Dichrocephala latifolia* (Desf.) L'Hér. *ex* DC., **FMP2** 194; herb to 60 cm tall; open damp places in lowlands and hills; Pn, Pk, Ph.

78.14.1 **Eclipta prostrata** (L.) L., **G20** 212, **M47** 76, **S31** 274; *Eclipta alba* (L.) Hassk., **FMP2** 185; slender erect or prostrate herb; damp waste ground; widespread.

78.15.1 **Elephantopus mollis** Kunth, **K52** 131, **S31** 260; herb to 40 cm tall; waste ground in the hills; Penang Hill and Fraser's Hill, Ph; naturalized from tropical America.

78.15.2 **Elephantopus scaber** L., **FMP2** 180; rhizomatous herb to 50 cm tall; open grassland and lawns; common throughout.

78.15.3 **Elephantopus tomentosus** L., **FMP2** 180; herb to 1 m tall; roadside weed; scattered; naturalized from tropical America.

78.16.1 **Eleutheranthera ruderalis** (Sw.) Sch.Bip., **M31** 133 '*Eleuranthera*', **G20** 217, **C26** 661, **M47** 78, **S31** 275; erect herb to 75 cm tall; waste ground; Sp; naturalized from tropical America.

78.17.1 **Emilia sonchifolia** (L.) DC., **FMP2** 191, **G20** 251, **M47** 80, **S31** 318; herb to 30 cm tall; weed of cultivation, waste ground; throughout.

78.18.1 **Enydra fluctuans** Lour., **FMP2** 183, **L01** 4, **M47** 82; scrambling herb; wet muddy places; scattered.

78.19.1 **Epaltes australis** Less., **FMP2** 195, **F15** 41; low tufted herb; Kl, Tg.

78.20.1 **Erechtites hieraciifolia** (L.) Raf. *ex* DC., **B17** 13; *Gynura malasica* (Ridl.) Ridl., **FMP2** 191, **D07** 716; herb to 1 m tall; waste ground; widespread; naturalized for tropical America.

78.20.2 **Erechtites valerianifolia** (Wolf) DC., **FMP2** 191, **B17** 25, **G20** 243, **S31** 315; herb to 1.5 m tall; waste ground; widespread; naturalized from tropical America.

78.21.1 **Galinsoga parviflora** Cav., **K52** 136, **M47** 88; herb; waste ground in the hills; Fraser's Hill and Cameron Highlands, Ph; naturalized from America.

78.22.1 **Grangea maderaspatana** (L.) Poir., **FMP2** 195, **G20** 150, **M47** 90; prostrate herb; weed of paddy-fields; Ps.

78.23.1 **Gynura malaccensis** Belcher, **B18** 538; herb to 1 m tall; Ml; endemic.

78.23.2 **Gynura procumbens** (Lour.) Merr., **D07** 717; *Gynura sarmentosa* (Blume) DC., **FMP2** 189; climbing herb; lowland and hill forest to 1000 m; widespread.

78.24.1 **Microglossa pyrifolia** (Lam.) Kuntze, **K65** 6; *Microglossa volubilis* DC., **FMP2** 196; shrubby climber; clearings in the hills; widespread.

78.25.1 **Mikania cordata** (Burm.*f.*) B.L. Rob., **G20** 146, **H40** 228; *Mikania scandens auct. non* (L.) Willd., **FMP2** 181; twining herb; forest margins, waste places; throughout.

78.25.2 **Mikania micrantha** Kunth, **C23** 661, **H40** 233, **M47** 92, **S31** 297; twining herb; forest margins, waste ground; Sp; naturalized from South America.

78.26.1 **Pluchea indica** (L.) Less., **FMP2** 194, **F15** 47; shrub to 1.5 m tall; common in tidal swamps; throughout.

78.27.1 **Porophyllum ruderale** (Jacq.) Cass., **V21** 400, **T05** 129, **M47** 94; erect herb; open sandy waste ground; Sp; naturalized from tropical America.

78.28.1 **Pseudognaphalium affine** (D. Don) Anderb., **A12** 146; *Gnaphalium affine* D. Don, **K52** 136, **S53** 79; *Pseudognaphalium luteo-album* (L.) Hilliard & B.L. Burtt ssp. *affine* (D. Don) Hilliard & B.L. Burtt, **H39** 206; herb; roadsides, weed of cultivation in hill resorts; Cameron Highlands, Genting Highlands, Ph; naturalized from Europe/Continental Asia.

78.29.1 **Sigesbeckia orientalis** L., **FMP2** 184, **G20** 210, **S31** 269; erect herb to 1.5 m tall; waste ground, garden weed; scattered.

78.30.1 **Sonchus oleraceus** L., **S28** 265, **T19** 126; herb to 1 m tall; weed of cultivation; Cameron Highlands, Ph; naturalized from temperate Eurasia.

78.31.1 **Sphaeranthus africanus** L., **FMP2** 180, **M47** 98; spreading herb; damp waste ground; widespread; naturalized from Africa.

78.32.1 **Spilanthes anactina** F. Muell.; **J04** 248; *Spilanthes urens auct. non* Jacq., **K14** 275; creeping herb to 40 cm tall; once from Jason's Bay, Jh.

78.33.1 **Struchium sparganophorum** (L.) Kuntze, **G20** 120, **S31** 259; *Sparganophorus vaillantii* Crantz, **FMP2** 179; herb to 75 cm tall; river banks and ditches; naturalized from tropical America.

78.34.1 **Synedrella nodiflora** (L.) Gaertn., **FMP2** 184, **G20** 222, **S31** 276, **M47** 106; herb to 1.5 m tall; common weed; widespread; naturalized from the Caribbean.

78.35.1 **Tridax procumbens** L., **FMP2** 186, **G20** 232, **M47** 108, **S31** 288; herb to 30 cm tall; weed of lawns, waste ground; widespread; naturalized from tropical America.

78.36.1 **Vernonia arborea** Buch.-Ham, **TFM4** 70; *Vernonia wallichii* Ridl., **FMP2** 186; *Vernonia javanica* (Blume) DC., **FMP2** 187 incl. var. *mollissima* Ridl.; tree to 20 m tall; lowland and hill forest to 1500 m; Kd, Pk and Kl southwards.

78.36.2 **Vernonia attenuata** DC., **FMP2** 187; herb to 60 cm tall; near the sea; P. Langkawi.

78.36.3 **Vernonia cinerea** (L.) Less., **FMP2** 188, **G20** 133, **M47** 110, **S31** 262; herb rarely more than 30 cm tall; common and ubiquitous weed; throughout.

78.36.4 **Vernonia curtisii** Craib & Hutch., **FMP2** 189, **C14** 109; herb to 1 m tall; on limestone; P. Langkawi.

78.36.5 **Vernonia eleagnifolia** DC., **FMP2** 187; drooping shrub; open places and river banks; widespread.

78.36.6 **Vernonia patula** (Dryand.) Merr., **F15** 60; *Vernonia chinensis auct. non* (L.) Less., **FMP2** 188; wiry spreading herb; waste places; widespread.

78.36.7 **Vernonia rupicola** Ridl., **FMP2** 189, **C14** 109; herb with slightly woody base, to 1 m tall; on limestone; P. Langkawi; endemic.

78.37.1 **Wollastonia biflora** (L.) DC., **S31** 271; *Wedelia biflora* (L.) DC., **FMP2** 185, **G20** 216; scrambling herb; common in tidal mud; widespread.

78.38.1 **Youngia japonica** (L.) DC., **G20** 268, **S31** 267; *Crepis japonica* (L.) Benth., **FMP2** 197; herb to 60 cm tall; grassy banks; widespread.

79. CONNARACEAE

79.1.1 **Agelaea borneensis** (Hook.*f.*) Merr., **FMı5** 504, **TFM3** 48, **J19** 166; *Agelaea vestita* Hook.*f.*, **FMP1** 553; big liana or scrambling shrub; lowland forest to 700 m; widespread.

79.1.2 **Agelaea macrophylla** (Zoll.) Leenh., **FMi5** 502, **TFM3** 48, **J19** 48; *Agelaea hullettii* King, **FMP1** 553; *Agelaea wallichii* Hook.*f.*, **FMP1** 553; *Agelaea trinervis* (Llanos) Merr., **FMi5** 502, **TFM3** 48; big woody climber with stems to 5 cm thick; lowland forest to 700 m; widespread.

79.2.1 **Cnestis palala** (Lour.) Merr., **L18** 215; *Cnestis ramiflora* Griff., **FMP1** 554; *Cnestis palala* ssp. *diffusa* (Blanco) Andreas, **FMi5** 499, **TFM3** 48; *Cnestis platantha* Griff., **FMi5** 499, **TFM3** 48; liana to 25 m long, scrambling shrub or small tree to 10 m tall; open country or lowland forest; Kd, Kl, Pn, Pk, Sl, Jh, Sp.

79.3.1 **Connarus cochinchinensis** (Baill.) Pierre, **FMi5** 536, **TFM3** 49; liana or treelet; lowland forest or scrub; north of Malaya.

79.3.2 **Connarus euphlebius** Merr., **H35** 99, **FMi5** 527, **TFM3** 49; liane reaching to 25 m, or scandent shrub; lowland forest to 600 m; P. Tioman, Ph.

79.3.3 **Connarus ferrugineus** Jack, **FMP1** 545, **FMi5** 530, **TFM3** 49; liana to 25 m high, sometimes erect shrub or small tree; open country, lowland forest margins; widespread, common on West Coast; endemic.

79.3.4 **Connarus grandis** Jack, **FMi5** 529, **TFM3** 49; *Connarus ellipticus* King, **FMP1** 547; liane reaching 30 m high, or small tree; open country or forest margins to 1200 m; widespread.

79.3.5 **Connarus monocarpus** L. ssp. **malayensis** Leenh., **FMi5** 538, **TFM3** 50; *Connarus oligophyllus* Wall. *ex* Planch., **FMP1** 546 incl. var. *maingayi* (Hook.*f.*) Ridl.; liane to 25 m, shrub or small tree; lowland forest, edges, clearings to 600 m; widespread.

79.3.6 **Connarus odoratus** Hook.*f.*, **FMi5** 533, **TFM3** 49; *Connarus villosus auct. non* Jack, **FMP1** 547; scandent shrub or big liana to 35 m high; lowland forest to 450 m; Pk.

79.3.7 **Connarus paniculatus** Roxb., **FMi5** 533, **TFM3** 49; liana; lowland forest; Jh.

79.3.8 **Connarus planchonianus** Schellenb., **FMi5** 528, **TFM3** 49; *Connarus grandis* (*non* Jack) Hook.*f.*, **FMP1** 547; liana reaching to 30 m high, sometimes shrubby; lowland forest to 300 m; Pn to Sp.

79.3.9 **Connarus semidecandrus** Jack, **FMP1** 546, **FMi5** 534, **TFM3** 49; *Connarus griffithii* Hook.*f.*, **FMP1** 546; large liana, sometimes shrub or small tree; common in open country; widespread.

79.3.10 **Connarus sp. A**, **TFM3** 49; liana; lowland forest; once each from Kl and Ph.

79.4.1a **Ellipanthus tomentosus** Kurz ssp. **tomentosus** var. **gibbosus** (King) Leenh., **FMi5** 523, **TFM3** 51; *Ellipanthus gibbosus* King, **FMP1** 549; shrub or small tree to 10 m tall; lowland and hill forest; widespread.

79.4.1b **Ellipanthus tomentosus** Kurz ssp. **tomentosus** var. **tomentosus**, **FMi5** 523, **TFM3** 50; *Ellipanthus curtisii* King, **FMP1** 548; *Ellipanthus griffithii* Hook.*f.*, **FMP1** 548; shrubs or small trees, occasionally to 30 m tall; lowland and hill forest; widespread.

79.5.1 **Rourea acutipelata** Miq., **J20** 367; *Taeniochlaena griffithii* Hook.*f.*, **FMP1** 554; *Roureopsis acutipetala* (Miq.) Leenh., **FMi5** 509, **TFM3** 52; climbing shrub; lowland forest; Pk, Ml, Jh.

79.5.2 **Rourea asplenifolia** (Schellenb.) Jongkind, **J20** 366; *Roureopsis asplenifolia* Schellenb., **FMi5** 506, **TFM3** 52; large liana; lowland forests and forest margins; rare.

79.5.3 **Rourea dictyophylla** Jongkind, **J20** 366; *Agelaea pinnata* King, **FMP1** 553; *Roureopsis pinnata* (King) Leenh., **FMi5** 510, **TFM3** 52; liana; lowland forest; once from Larut, Pk.

79.5.4 **Rourea emarginata** (Jack) Jongkind, **J20** 367; *Roureopsis pubinervis* Planch., **FMP1** 552; *Roureopsis scortechinii* King, **FMP1** 552; *Roureopsis emarginata* (Jack) Merr., **FMi5** 508, **TFM3** 52; liane reaching to 25 m, sometimes shrubby; lowland and hill forest; Pn, Pk, Sl, Ml.

79.5.5 **Rourea fulgens** Planch., **FMP1** 551, **FMi5** 519, **TFM3** 51; liana or climbing shrub; lowland forest; Sl, NS, Jh, Sp.

79.5.6 **Rourea mimosoides** (Vahl) Planch., **FMi5** 517, **TFM3** 51; *Rourea concolor* Blume, **FMP1** 551; *Rourea similis* Blume, **FMP1** 551; liane to over 50 m long; lowland and hill forest to 750 m; throughout.

79.5.7 **Rourea minor** (Gaertn.) Leenh., **FMi5** 514, **TFM3** 51; *Rourea anomala* King, **FMP1** 549; *Rourea acuminata* Hook.*f.*, **FMP1** 550; *Rourea humilis* Blume, **FMP1** 550; *Rourea pulchella* Planch., **FMP1** 550; *Connaropsis rubescens* Ridl., **FMP5** 294; liana, occasionally shrubby; lowland to montane forest; throughout.

79.5.8 **Rourea prainiana** Talbot, **FMi5** 520, **TFM3** 51; scandent shrub or small tree; montane forest at about 1500 m; Pk, Ph.

79.5.9 **Rourea rugosa** Planch., **FMP1** 550, **FMi5** 514, **TFM3** 51; liane climbing to 25 m; lowland and hill forest; widespread; endemic.

80. CONVOLVULACEAE

80.1.1 **Aniseia martinicensis** (Jacq.) Choisy, **FMI4** 435, **TFM4** 73; twining or prostrate vine; swamp grassy places; widespread; naturalized from tropical America.

80.2.1 **Argyreia adpressa** (Choisy) Boerl., **FMI4** 501; *Lettsomia adpressa* (Choisy) Miq., **FMP2** 451; twining liana to 20 m high; hill forest; P. Langkawi, Kd, Pn, Pk, Sl.

80.2.2 **Argyreia capitata** (Vahl) Choisy, **FMI4** 502; *Lettsomia peguensis* C.B. Clarke, **FMP2** 450; liana twining to 15 m high; forests and forest margins, lowlands and mountains; P. Langkawi, Pn, Kl, Pk, Ph, Sl, NS.

80.2.3 **Argyreia corneri** Hoogl., **FMI4** 504; liana twining to 15 m high; Ulu Bendong, Ph; endemic.

80.2.4 **Argyreia kunstleri** (Prain) Prain *ex* Ooststr., **FMI4** 505; *Lettsomia curtisii* Prain, **FMP2** 451; *Lettsomia kunstleri* Prain, **FMP2** 453; liana twining to 30 m high; lowland and hill forest to 700 m; Pk, Sl, Ml, NS; endemic.

80.2.5 **Argyreia maingayi** (C.B. Clarke) Hoogl., **FMI4** 502; *Lettsomia maingayi* C.B. Clarke, **FMP2** 450; twining liana; swampy forest margins to 1000 m; Ph, Sl, Ml, Jh; endemic.

80.2.6 **Argyreia mollis** (Burm.*f.*) Choisy, **FMP2** 449, **FMI4** 496; twining liana to 10 m high; secondary forest and waste places, sometimes on limestone; Ps, P. Langkawi, Kd.

80.2.7 **Argyreia ooststroomii** Hoogl., **FMI4** 504; twining liana; secondary forest margins; Kl, Tg; endemic.

80.2.8 **Argyreia penangiana** (Wall. *ex* Choisy) Boerl., **FMI4** 500; *Lettsomia penangiana* (Wall. *ex* Choisy) Miq., **FMP2** 451; slender twining liana to 3 m tall; lowland to montane forest at 1700 m; Pn, Pk; endemic.

80.2.9a **Argyreia reticulata** (Prain) Hoogl. var. **microcalyx** Hoogl., **FMI4** 504; twining liana to 10 m high; forest margins; Sl; endemic.

80.2.9b **Argyreia reticulata** (Prain) Hoogl. var. **reticulata**, **FMI4** 504; *Lettsomia penangiana* (Choisy) Miq. var. *reticulata* Prain, **FMP2** 452; twining liana to 10 m high; forest clearings to 1400 m; Pk, Ph, Sl; endemic.

80.2.10 **Argyreia ridleyi** (Prain) Prain *ex* Ooststr., **FMI4** 503; *Lettsomia ridleyi* Prain, **FMP2** 451 incl. var. *velutina* Prain; twining liana; damp lowland and hill forest to 600 m; Tg, Pk, Ph, Sl, NS, Jh, Sp.

80.2.11 **Argyreia rubicunda** Choisy, **FMI4** 506; *Lettsomia rubicunda* (Choisy) C.B. Clarke, **FMP2** 453; twining liana; lowland forest; NS, Ml; endemic.

80.2.12 **Argyreia scortechinii** (Prain) Hoogl., **FMI4** 500; *Lettsomia scortechinii* Prain, **FMP2** 452; montane forests at 1300–1500 m; Pk, Ph; endemic.

80.2.13 **Argyreia sphaerocephala** (Prain) Hoogl., **FMI4** 503; *Lettsomia sphaerocephala* Prain, **FMP2** 450; twining liana; only known from Pk; endemic.

80.3.1 **Bonamia semidygyna** (Roxb.) Hallier *f.*, **FMP2** 454, **FMI4** 398; twining liana to 15 m tall; forest margins in the lowlands; widespread.

80.4.1 **Cuscuta australis** R.Br., **FMI4** 392; *Cuscuta hygrophilae* H. Pearson, **FMP2** 444; greenish-yellow to orange leafless twining parasitic vine; waste and cultivated ground; widespread.

80.5.1 **Erycibe aenea** Prain, **FMP2** 446, **FMI4** 424, **TFM4** 76; stout liana to 50 m long; lowland forest; Kl, Pk, Ph, Sl, Jh.

80.5.2 **Erycibe albida** Prain, **FMI4** 414, **TFM4** 77; *Erycibe glomerata* (*non* Blume) Prain, **FMP2** 447 incl. var. *longifolia* (*non* Blume) Prain, shrub or small tree to 7 m tall; lowland and hill forest to 820 m; Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh.

80.5.3 **Erycibe citriniflora** Griff., **FMP2** 445, **FMI4** 425, **TFM4** 75; liana or scrambling shrub; lowland forest; Kd, Pn, Tg, Sl, Jh, Sp.

80.5.4 **Erycibe expansa** Wall. *ex* G. Don, **FMP2** 445, **FMI4** 426, **TFM4** 76; liana or scandent shrub; lowland forest; P. Langkawi, Kd, Pn.

80.5.5 **Erycibe festiva** Prain, **FMP2** 447, **FMI4** 417, **TFM4** 76; shrubby climber; lowland and hill forest; Pk, Jh, Sp.

80.5.6 **Erycibe griffithii** C.B. Clarke, **FMP2** 447 in part, **FMI4** 411, **TFM4** 75; liana; lowland forest; Pn, Pk, Sl, Ml, Sp.

80.5.7 **Erycibe leucoxyloides** King *ex* Prain, **FMP2** 446, **FMI4** 415, **TFM4** 74; shrubby climber; lowland forest; Sl, Jh, Sp; endemic.

80.5.8 **Erycibe magnifica** Prain, **FMP2** 445, **FMI4** 412, **TFM4** 75; liana to 35 m long; lowland forest; thrice from Larut, Pk; endemic.

80.5.9 **Erycibe maingayi** C.B. Clarke, **FMI4** 417, **TFM4** 76; *Erycibe griffithii* (*non* C.B. Clarke) Prain, **FMP2** 447 in part; scandent shrub or liana; lowland forest; Jh, Sp.

80.5.10 **Erycibe malaccensis** C.B. Clarke, **FMP2** 446, **FMI4** 428, **TFM4** 76; liana; lowland and montane forest to 1800 m; Pn, Pk, Ph, Ml, Sp.

80.5.11 **Erycibe praecipua** Prain, **FMP2** 447, **FMI4** 409, **TFM4** 76; shrubby climber; lowland and hill forest; Pn, Pk, Jh.

80.5.12 **Erycibe rheedii** Blume, **FMi4** 425, **TFM4** 75; *Erycibe angulata* Prain, **FMP2** 448; liana to 20 m long; lowland forest; Kd, Pk, Sl, Ml, Jh.

80.5.13 **Erycibe sapotacea** Hallier *f.* & Prain *ex* Prain, **FMP2** 447, **FMi4** 409, **TFM4** 76; hill forest at 350 m; Pn; endemic.

80.5.14 **Erycibe stapfiana** Prain, **FMP2** 448, **FMi4** 423, **TFM4** 75; liana to 30 m long; lowland and montane forest to 1200 m; Pk, Ph, Sl, Jh.

80.5.15 **Erycibe strigosa** Prain, **FMP2** 445, **FMi4** 416, **TFM4** 75; liana; lowland forest; known only from type, Taiping, Pk; endemic.

80.5.16a **Erycibe tomentosa** Blume var. **hirsuta** (Hallier *f.*) Hoogl., **FMi4** 428, **TFM4** 75; slender liana; lowland forest; Jh, Sp.

80.5.16b **Erycibe tomentosa** Blume var. **tomentosa**, **FMi4** 427, **TFM4** 76; *Erycibe princii* Wall. *ex* Choisy, **FMP2** 446; '*princei*'; liana, occasionally a shrub; lowland forest margins; NS, Ml, Jh, Sp.

80.5.17 **Erycibe sp. A**, **TFM4** 75; liana; hill forest at 400 m; once from Gg Belumut, Jh; endemic.

80.5.18 **Erycibe sp. B**, **TFM4** 76; liana; lowland forest; Ph, Sl, NS; endemic.

80.6.1 **Evolvulus alsinoides** (L.) L., **FMP2** 454, **FMi4** 395, **TFM4** 73; prostrate or erect herb; sandy shores, dry open places; mostly East Coast.

80.7.1 **Hewittia sublobata** (L.*f.*) Kuntze, **FMi4** 438, **TFM4** 73; *Hewittia bicolor* Wight & Arn., **FMP2** 455; prostrate or twining vine to 2 m long; open grassy places; Pk, Ml.

80.8.1 **Ipomoea aquatica** Forssk., **FMi4** 473; *Ipomoea reptans* Poir., **FMP2** 462; trailing herb to 3 m long; on wet soil or in shallow water, oft cultivated; throughout.

80.8.2 **Ipomoea cairica** (L.) Sweet, **FMi4** 478; *Ipomoea pulchella auct. non* Roth, **FMP2** 460; twining vine; waste places, fences and hedges; naturalized from tropical America.

80.8.3 **Ipomoea campanulata** L., **A15** 327, **FMi9** 558; *Ipomoea illustris* (C.B. Clarke) Prain, **FMP2** 460, **FMI4** 485; slightly woody twining vine; climbing on sea shore vegetation; scattered.

80.8.4 **Ipomoea indica** (Burm.*f.*) Merr., **F13** 37; *Ipomoea congesta* R.Br., **FMi4** 465; twining vine; waste places, forest margins, also cultivated; scattered.

80.8.5 **Ipomoea littoralis** Blume, **FMP2** 461, **FMi6** 941; *Ipomoea gracilis auctt. plur., non* R.Br., **FMi4** 470; creeping herb, sometimes climbing; sandy shores; most coasts.

80.8.6 **Ipomoea marginata** (Desv.) Verdc., **V40** 658; *Ipomoea sagittaefolia* Burm.*f.*, **FMP2** 461; *Ipomoea maxima auctt. plur., non* (L.*f.*) Don *ex* Sweet, **FMi4** 472; *Ipomoea sepiaria* Koenig *ex* Roxb., *nom. illeg.*, **FMi6** 941; twining or prostrate vine to 2.5 m long; usually near the sea; scattered.

80.8.7 **Ipomoea mauritiana** Jacq., **S29** 63; *Ipomoea digitata auct. non* L., **FMP2** 460, **FMi4** 483; large twining vine; beaches, waste places, hedges; widespread.

80.8.8 **Ipomoea nil** (L.) Roth, **FMi4** 465; twining or prostrate vine; roadsides; Pn; naturalized from tropical America.

80.8.9 **Ipomoea obscura** (L.) Ker Gawl., **FMP2** 461, **FMi4** 471; twining or creeping vine to 2 m long; roadsides, waste ground; scattered.

80.8.10 **Ipomoea pes-caprae** (L.) R.Br. ssp. **brasiliensis** (L.) Ooststr., **FMP2** 460, **FMi4** 475; trailing herb to 30 m long; sandy seashores; all coasts.

80.8.11 **Ipomoea pes-tigridis** L., **FMP2** 460, **FMi4** 467; twining or creeping vine; sandy waste places; scattered.

80.8.12 **Ipomoea pileata** Roxb., **FMi4** 467; twining vine; dry open places; Ps.

80.8.13 **Ipomoea stolonifera** (Cirillo) J.F. Gmel., **FMi4** 478; *Ipomoea carnosa* R.Br., **FMP2** 461; trailing herb to 5 m long; sand dunes and beaches; Ph, Ml.

80.8.14 **Ipomoea sumatrana** (Miq.) Ooststr., **FMi4** 486; *Ipomoea staphylina* Roem. & Schult. var. *malayana* Prain, **FMP2** 462; shrubby climber; lowland and hill forest; Ps, Kd, Pn, Pk, Ph.

80.8.15 **Ipomoea triloba** L., **FMi4** 468, **M47** 142; twining or creeping vine; sandy areas and waste places; widespread; naturalized from tropical America.

80.8.16 **Ipomoea violacea** L., **M10** 265; *Ipomoea tuba* (Schltl.) G. Don, **S23** 33, **FMI4** 487; *Ipomoea macrantha* Roem. & Schult., **FMi9** 558; woody twining vine; sea shores; Ps, P. Langkawi, Kd, Sp.

80.9.1 **Jacquemontia paniculata** (Burm.*f.*) Hallier *f.*, **FMP2** 456, **FMi4** 432; twining vine; forest margins, dry grassy places; Ps, Pk.

80.10.1 **Lepistemon binectariferum** (Wall.) Kuntze, **FMi4** 489; *Lepistemon flavescens* Blume, **FMP2** 462; twining vine to 3 m high; forest margins; widespread.

80.11.1 **Merremia borneensis** Merr., **FMi4** 451; large woody twiner; roadsides and along streams in the lowlands, Tg.

80.11.2 **Merremia hederacea** (Burm.*f.*) Hallier *f.*, **FMi4** 441; *Merremia convolvulacea* Dennst. *ex* Hallier *f.*, **FMP2** 458; twining or prostrate vine; sandy open places, weed of cultivation; throughout.

80.11.3 **Merremia hirta** (L.) Merr., **FMi4** 442; *Merremia caespitosa* (Roxb.) Hallier *f.*, **FMP2** 458; creeping or climbing twiner; open grassy places; widespread.

80.11.4 **Merremia peltata** (L.) Merr., **FMi4** 452; *Merremia nymphaeifolia* (*non* Griseb.) Blume, **FMP2** 458; liana to 30 m high; forest edges and clearings to 700 m; Pk, Ph, NS, Ml.

80.11.5 **Merremia umbellata** (L.) Hallier *f.* ssp. **orientalis** (Hallier *f.*) Ooststr., **FMP2** 459, **FMi4** 449; twining vine to 3 m long; thickets, forest margins; widespread.

80.11.6 **Merremia vitifolia** (Burm.*f.*) Hallier *f.*, **FMP2** 457, **FMi4** 448; twining vine to 4 m long; riverbanks and forest margins; Ps, Pk, Ph.

80.12.1a **Neuropeltis maingayi** Peter *ex* Ooststr. var. **maingayi**, **FMi4** 400; liana to 9 m high; lowland forest; Pk, Sl, Ml; endemic.

80.12.1b **Neuropeltis maingayi** Peter *ex* Ooststr. var. **tomentosa** Ooststr., **FMi4** 401; liana; lowland forest; Ph, Ml; endemic.

80.12.2 **Neuropeltis racemosa** Wall., **FMP2** 453, **FMi4** 400; twining liana; lowland forest; Kd, Pn, Sp.

80.13.1 **Operculina riedeliana** (Oliv.) Ooststr., **FMi4** 457; twining liana; forest margins; NS.

80.13.2 **Operculina turpethum** (L.) Silva Manso, **FMi4** 456; twining vine; waste places; Pn, Jh.

80.14.1 **Porana spectabilis** Kurz, **FMi4** 404; twining liana; once from Pk.

80.15.1 **Stictocardia tiliifolia** (Desr.) Hallier *f.*, **FMi4** 491; large liana; open places, often near the sea; P. Langkawi.

80.16.1a **Xenostegia tridentata** (L.) D.F. Austin & Staples ssp. **hastata** (Desr.) Parmar, **P06** 251; *Merremia hastata* (Desr.) Hallier *f.*, **FMP2** 457; *Merremia tridentata* (L.) Hallier *f.* ssp. *hastata* (Desr.) Ooststr., **FMi4** 445; twining vine to 2 m long; open grassy places, often near the sea; widespread.

80.16.1b **Xenostegia tridentata** (L.) D.F. Austin & Staples ssp. **tridentata**, **A16** 533; *Merremia tridentata* (L.) Hallier *f.*, **FMP2** 458, **FMi4** 445; twining vine to 2 m long; open grassy places, often near the sea; widespread.

81. CORNACEAE

81.1.1 **Mastixia cuspidata** Blume, **FMi8** 95, **TFM3** 54; *Mastixia bracteata* C.B. Clarke, **FMP1** 891; tree to 24 m tall; lowland and hill forest; Pk, Sl, NS, Ml, Jh.

81.1.2a **Mastixia pentandra** Blume ssp. **chinensis** (Merr.) K.M. Matthew, **FMi8** 96, **TFM3** 54; tree to 20 m tall; montane forest; once from Gg Raya, Kd.

81.1.2b **Mastixia pentandra** Blume ssp. **scortechinii** (King) K.M. Matthew, **FMi8** 96, **TFM3** 54; *Mastixia megacarpa* Ridl., **FMP1** 891; *Mastixia scortechinii* King, **FMP1** 891; tree to 36 m tall; lowland to montane forest at 1500 m; Kd, Kl, Pn, Pk, Ph, Sl, NS, Jh.

81.1.3a **Mastixia trichotoma** Blume var. **clarkeana** (King) Danser, **FMi8** 93, **TFM3** 54; *Mastixia clarkeana* King, **FMP1** 890 incl. var. *macrophylla* King; tree to 24 m tall; lowland and hill forest to 900 m; Kd, Pk, Sl, NS, Jh.

81.1.3b **Mastixia trichotoma** Blume var. **maingayi** (C.B. Clarke) Danser, **FMi8** 93, **TFM3** 54; *Mastixia maingayi* C.B. Clarke, **FMP1** 890; *Mastixia propinqua* Ridl., **FMP1** 890; *Mastixia rostrata auct. non* Blume, **FMP1** 890; tree to 24 m tall; lowland to montane forest at 1500 m; Pn, Pk, Ph, Sl, Jh, Sp.

81.2.1 **Nyssa javanica** (Blume) Wangerin, **FMi4** 29, **TFM1** 346; *Nyssa sessiliflora* Hook.*f.* & Thomson, **FMP1** 895; tree to 40 m tall; montane forest at 900–1400 m; Pk, Ph.

82. CRASSULACEAE

82.1.1 **Kalanchoe pinnata** (Lam.) Pers., **FMi4** 199; *Bryophyllum calycinum* Salisb., **FMP1** 688; herb 30–200 cm tall; open dry places to 1000 m; scattered; naturalized from tropical Africa.

83. CRUCIFERAE

83.1.1 **Brassica juncea** (L.) Czern., **FMi10** 545; herb 30–150 cm tall; waste land, weed of cultivation; montane areas; naturalized, origins obscure.

83.2.1 **Cardamine hirsuta** L., **FMi10** 554; herb to 30 cm tall; weed of cultivation; widespread; possibly native in the mountains.

83.2.2 **Cardamine flexuosa** With., **S65** 107; small herb; weed of cultivation; Genting Highlands, Ph; naturalized from Europe.

83.3.1 **Rorippa heterophylla** (Blume) R.O. Williams, **FMi10** 559; *Nasturtium indicum auct. non* (L.) DC., **FMP1** 119; herb to 50 cm tall; weed of cultivation, waste ground; scattered; naturalized from mainland Asia.

84. CRYPTERONIACEAE

84.1.1 **Axinandra beccariana** Baill., **FMi8** 204, **TFM4** 79; *Axinandra maingayi* C.B. Clarke, **FMP1** 826; tree; lowland forest; collected once in Ml.

84.2.1 **Crypteronia griffithii** C.B. Clarke, **FMP1** 822, **FMi8** 196, **TFM4** 80; tree to 45 m tall; lowland and hill forest to 600 m; Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

84.2.2a **Crypteronia paniculata** Blume var. **affinis** (Planch.) Beus.-Osinga, **FMi8** 194, **TFM4** 81; *Crypteronia paniculata* Blume, **FMP1** 821 in part; tree to 27 m tall; lowland forest; Kd, Kl, Pn.

84.2.2b **Crypteronia paniculata** Blume var. **paniculata**, **FMi8** 194, **TFM4** 80; *Crypteronia paniculata* Blume, **FMP1** 821 in part; tree to 30 m tall; lowland and hill forest to 1200 m; Ps, Kd, Kl, Pn, Pk, Ph, Sl, NS.

85. CTENOLOPHONACEAE

85.1.1 **Ctenolophon parvifolius** Oliv., **FMP1** 423, **TFM1** 306, **FMi10** 631; *Ctenolophon grandifolius* Oliv., **FMP1** 423; buttressed tree 12–40 m tall; hilly forest below 300 m, also swamps; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

86. CUCURBITACEAE

86.1.1 **Alsomitra clarkei** (King) Hutch., **H57** 96; *Zanonia clarkei* King, **FMP1** 852; lofty climber; lowlands; Pk, Sl; endemic.

86.1.2 **Alsomitra macrocarpa** (Blume) M. Roem., **H57** 96, **R11** 59; lofty woody climber; lowland forest; Ph, NS, Jh.

86.2.1 **Gymnopetalum chinense** (Lour.) Merr., **J11** 379, **L23** 858; *Gymnopetalum cochinchinense* (Lour.) Kurz, **FMP1** 846; *Gymnopetalum quinquelobum* Miq., **FMP1** 847; creeping herb; open grassy places. also on limestone; P. Langkawi, Kl, Ph, Ml.

86.2.2 **Gymnopetalum integrifolium** (Roxb.) Kurz, **FMP1** 846, **K12** 100; creeping herb; open grassy places; Kl, Pk.

86.3.1 **Gynostemma pentaphyllum** (Thunb.) Makino, **K12** 25, **J10** 803, **L23** 860; *Gynostemma pedatum* Blume, **FMP1** 851; vine; forest margins; Pk.

86.4.1 **Hodgsonia macrocarpa** (Blume) Cogn., **K12** 74; *Hodgsonia capniocarpa* Ridl., **FMP1** 843; large vine; riverbanks; Pn, Ph, Ml.

86.5.1 **Momordica charantia** L., **K12** 42, **L23** 861; tendrillar vine; waste ground; widespread; naturalized but origin obscure.

86.5.2 **Momordica clarkeana** King, **FMP1** 848; climber, lowland forest; Pk.

86.5.3 **Momordica cochinchinensis** (Lour.) Spreng., **FMP1** 848, **K12** 38; **L23** 861; large climber; river banks; Pn, Kl, Pk, Ph, Sl.

86.5.4 **Momordica subangulata** Blume, **FMP1** 848, **K12** 41; climber; riverbanks and on limestone; Kl, Pk.

86.6.1 **Neoalsomitra integrifoliola** (Cogn.) Hutch., **H57** 99, **K12** 12, **J11** 739, **L23** 862; *Alsomitra clavigera auct. non* M. Roem., **FMP1** 852; *Neoalsomitra pubigera* (Prain) Hutch., **H57** 99, **C14** 112; slender climber; rocky places, including limestone; P. Langkawi, Kd.

86.7.1 **Solena amplexicaulis** (Lam.) K.N. Gandhi, **L23** 865; *Zehneria umbellata* Thwaites, **FMP1** 851; *Solena heterophylla* Lour., **K12** 63; vine; open sandy places; Pk.

86.8.1 **Trichosanthes celebica** Cogn., **FMP1** 845; climber; forest margins; scattered.

86.8.2 **Trichosanthes tricuspidata** Lour., **FMP1** 844, **K12** 81; *Trichosanthes palmata* Roxb., **FMP1** 845; slender climber; lowland forest; Pn, Pk, Ph.

86.8.3 **Trichosanthes wallichiana** (Ser.) Wight, **FMP1** 845; climber; lowland forest margins; widespread.

86.8.4 **Trichosanthes wawraei** Cogn., **FMP1** 845; climber; forest margins; widespread.

86.9.1 **Zanonia indica** L., **FMP1** 851, **K12** 16; *Tinospora curtisii* Ridl., **FMP1** 103; climber; damp lowland forest; Pn, Pk.

86.10.1 **Zehneria japonica** (Thunb.) H.Y. Liu, **L23** 870; *Melothria indica* Lour., **FMP1** 850; *Melothria odorata* C.B. Clarke var. *triloba* C.B. Clarke, **FMP1** 850; *Zehneria indica* (Lour.) Keraudren, **K12** 52, **J10** 802; slender vine; open country; Pn, Sl, Ml.

86.10.2 **Zehneria marginata** (Blume) Keraudren, **K12** 55; *Melothria marginata* (Blume) Cogn., **FMP1** 850 incl. var. *heterophylla* (Blume) Cogn.; *Melothria affinis* King, **FMP1** 849; vine; lowlands; widespread.

87. CUNONIACEAE

87.1.1 **Weinmannia blumei** Planch., **FMP1** 682, **TFM1** 179; tree to 12 m tall; montane forest above 1200 m; widespread.

88. DAPHNIPHYLLACEAE

88.1.1 **Daphniphyllum glaucescens** Blume, **TFM1** 181; *Daphniphyllum lancifolium* Hook.*f*., **FMP3** 235; *Daphniphyllum scortechinii* Hook.*f*., **FMP3** 235; tree to 15 m tall; upper montane forest; widespread.

88.1.2 **Daphniphyllum laurinum** (Benth.) Baill., **FMP3** 234, **TFM1** 182; *Daphniphyllum bancanum* Kurz, **FMP3** 234; tree to 8 m tall; secondary forest, open places, often near the sea; Ps, Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

89. DATISCACEAE

89.1.1 **Tetrameles nudiflora** R.Br., **FMP1** 865, **FMi4** 385, **TFM2** 29; tree to 45 m tall; lowland forest; Ps, P. Langkawi, Kd, Kl, Pk, Ph.

90. DICHAPETALACEAE

90.1.1 **Dichapetalum gelonioides** (Roxb.) Engl. ssp. **tuberculatum** Leenh., **FMi5** 311; *Ellipanthus scortechinii* King, **FMP1** 548; small shrubby tree; lowland forest; scattered.

90.1.2 **Dichapetalum griffithii** (Hook.*f*.) Engl., **FMi5** 313; *Chailletia griffithii* Hook.*f*., **FMP1** 419; shrub to 4 m tall, often climbing; lowland forest; Pk, Sl, NS, Ml; endemic.

90.1.3 **Dichapetalum helferianum** (Kurz) Pierre, **FMi5** 315; *Chailletia helferiana* Kurz, **FMP1** 417; scandent shrub; open country; Ps, P. Langkawi.

90.1.4 **Dichapaetalum laurocerasus** (Planch. *ex* Hook.*f*.) Engl., **FMi5** 315; *Chailletia laurocerasus* Planch. *ex* Hook.*f*., **FMP1** 417; liana; lowland and hill forest to 600 m; Pn, Pk; endemic.

90.1.5 **Dichapetalum longipetalum** (Turcz.) Engl., **FMi5** 314; shrub or liana; lowland forest.

90.1.6 **Dichapetalum sordidum** (Hook.*f*.) Leenh., **FMi5** 309; *Chailletia sordida* (Hook.*f*.) Ridl., **FMP1** 418; climbing shrub; lowland forest margins; Ml, Jh, Sp.

90.1.7 **Dichapetalum tenuifolium** (King) Engl., **FMi5** 312; *Chailletia tenuifolia* King, **FMP1** 416; shrub or small tree to 5 m tall; lowland and hill forest to 600 m; Pk; endemic.

90.1.8 **Dichapetalum timoriense** (DC.) Boerl., **FMi5** 307; *Chailletia tesselata* King, **FMP1** 416; *Chailletia deflexifolia* Turcz., **FMP1** 418; *Chailletia hookeri* King, **FMP1** 418; scandent shrub to 10 m tall; lowland and hill forest; scattered.

91. DILLENIACEAE

91.1.1 **Acrotrema costatum** Jack, **FMP1** 7, **FMi4** 151, **TFM1** 183; herb to 25 cm tall; lowland and hill forest to 1000 m; widespread.

91.2.1 **Dillenia albiflos** (Ridl.) Hoogl., **FMi4** 158, **TFM1** 186; *Wormia albiflos* Ridl., **FMP1** 9; tree to 17 m tall; lowland swamp forest; Jh; endemic.

91.2.2 **Dillenia excelsa** (Jack) Gilg, **FMi4** 169, **TFM1** 186 incl. var. *tomentella* (Martelli) Corner *ex* Masam. and var. *pubescens* (Corner) Corner *ex* Masam.; *Wormia oblonga* Wall. *ex* Hook.*f.* & Thomson, **FMP1** 9; *Wormia tomentella* Martelli, **FMP1** 10; tree to 30 m tall; lowland forest; throughout.

91.2.3 **Dillenia grandifolia** Wall. *ex* Hook.*f.* & Thomson, **FMP1** 11, **TFM1** 188; *Dillenia scortechinii* King, **FMP1** 12; *Dillenia eximia* Miq., **FMi4** 166; stilt-rooted tree to 30 m tall; lowland forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

91.2.4 **Dillenia indica** L., **FMP1** 10, **FMi4** 171, **TFM1** 188; tree to 20 m tall; often on stream banks; Kl, Tg, Pk, Ph, Sl, Jh.

91.2.5 **Dillenia obovata** (Blume) Hoogl., **FMi4** 173, **TFM1** 190; *Dillenia aurea auct. non* Sm., **FMP1** 11; tree to 30 m tall; open forest; Kd, Pk, Ph.

91.2.6 **Dillenia ovata** Wall. *ex* Hook.*f.* & Thomson, **FMP1** 11, **FMi4** 170, **TFM1** 190; tree to 30 m tall but usually smaller; open forest and disturbed areas; Kd, Pk, Ph.

91.2.7 **Dillenia pulchella** (Jack) Gilg, **FMi4** 171, **TFM1** 191; *Wormia pulchella* Jack, **FMP1** 9; tree to 30 m tall; wet lowland forest; Tg, Pk, Ph, Sl, NS, Jh.

91.2.8a **Dillenia reticulata** King var. **psilocarpella** Hoogl., **FMi4** 168, **TFM1** 191; stilt-rooted tree to 30 m tall; lowland forest; Kl, Pk, Ph, Sl, NS, Ml, Jh.

91.2.8b **Dillenia reticulata** King var. **reticulata**, **FMP1** 11, **FMi4** 168, **TFM1** 191; stilt-rooted tree to 30 m tall; lowland forest; Ml; endemic variety.

91.2.9 **Dillenia suffruticosa** (Griff.) Martelli, **FMi4** 163, **TFM1** 192; *Wormia subsessilis* Miq., **FMP1** 7; *Wormia suffruticosa* Griff., **FMP1** 8; thicket-forming shrub to 6 m tall; secondary forest; commonest in the south.

91.2.10 **Dillenia sumatrana** Miq., **FMi4** 170, **TFM1** 193; *Wormia parviflora* Ridl., **FMP1** 9; *Dillenia meliosmifolia* Hook.*f.* & Thomson, **FMP1** 12; tree to 20 m tall; lowland forest; Kd, Pk, Ph, Sl, NS.

91.3.1 **Tetracera akara** (Burm.*f.*) Merr., **FMi4** 146; *Tetracera sylvestris* Ridl., **FMP1** 5; liana to 25 m long; lowland forest to 750 m; widespread.

91.3.2 **Tetracera arborescens** Jack, **FMi4** 148; *Tetracera lucida* Wall. *ex* Ridl., **FMP1** 5 incl. var. *lanuginosa* Ridl.; liana or shrub; swampy forest; scattered.

91.3.3a **Tetracera asiatica** (Lour.) Hoogl. ssp. **andamanica** Hoogl., **FMI4** 144; small shrub or liana.

91.3.3b **Tetracera asiatica** (Lour.) Hoogl. ssp. **sumatrana** Hoogl., **FMI4** 144; small shrub or liana; lowland and hill forest to 1300 m.

91.3.4 **Tetracera fagifolia** Blume, **FMP1** 6, **FMI4** 148; *Tetracera sumatrana* Miq., **FMP1** 6; liana reaching to 14 m; lowland forest to 750 m; scattered.

91.3.5 **Tetracera indica** (Christm. & Panz.) Merr., **FMI4** 146; *Tetracera assa* DC., **FMP1** 5; shrub or small liana; open places, forest margins in the lowlands; common and widespread.

91.3.6 **Tetracera loureiri** (Finet & Gagnep.) Craib, **FMI4** 147; *Tetracera fragrans* (*non* Wildem.) Ridl., **FMP1** 6; low climber; thickets and hedges; north of Peninsula.

91.3.7 **Tetracera macrophylla** Wall. *ex* Hook.*f.* & Thomson, **FMP1** 4, **FMI4** 147; *Tetracera grandis* King, **FMP1** 4; liana to 10 m long; lowland forest; widespread.

91.3.8 **Tetracera maingayi** Hoogl., **FMI4** 144; *Tetracera borneensis auct. non* Miq., **FMP1** 6; scandent shrub; lowland forest; Pn, Sl, Ml.

91.3.9 **Tetracera scandens** (L.) Merr., **FMI4** 143; *Delima sarmentosa* L., **FMP1** 3; liana to 30 m, sometimes shrubby; forest and forest margins to 1000 m; widespread.

92. DIPTEROCARPACEAE

92.1.1 **Anisoptera costata** Korth., **FMP1** 218 in part, **S74** 204, **FMI9** 330; huge tree; lowland forest; widespread.

92.1.2 **Anisoptera curtisii** Dyer *ex* King, **FMP1** 218, **S74** 204, **FMI9** 329; large buttressed tree; lowland and hill forest to 700 m; widespread but commoner in the north.

92.1.3 **Anisoptera laevis** Ridl., **FMP1** 219, **S74** 205, **FMI9** 335; big tree; lowland forest; widespread.

92.1.4 **Anisoptera marginata** Korth., **FMP1** 219, **S74** 206, **FMI9** 328; large tree; peat swamp and heath forest; Pk and Ph southward.

92.1.5 **Anisoptera megistocarpa** Slooten, **S74** 207, **FMI9** 332; *Anisoptera costata auct. non* Korth., **FMP1** 218 in part; tall buttressed tree; lowland forest; Pk and Ph southward.

92.1.6 **Anisoptera scaphula** (Roxb.) Kurz, **S74** 209, **FMi9** 335; *Anisoptera thurifera auct. non* Blume, **FMP1** 219; very tall buttressed tree; lowland forest; NS and Ph northward.

92.2.1 **Cotylelobium lanceolatum** Craib, **FMi9** 343; *Cotylelobium flavum auct. non* Pierre, **FMP1** 239; *Cotylelobium malayanum* Slooten, **S74** 235; medium to large tree; lowland forest; Tg southward.

92.2.2 **Cotylelobium melanoxylon** (Hook.*f.*) Pierre, **S74** 236, **FMi9** 341; tree; lowland forest; Jh, ?Sp.

92.3.1 **Dipterocarpus acutangulus** Vesque, **S74** 166, **FMi9** 322; tree; hill forest; NS.

92.3.2 **Dipterocarpus baudii** Korth., **S74** 168, **FMi9** 303; *Dipterocarpus duperreanus* Pierre, **FMP1** 214; large tree; lowland forest; widespread.

92.3.3 **Dipterocarpus caudatus** Foxw. ssp. **penangianus** (Foxw.) P.S. Ashton, **FMi9** 305; *Dipterocarpus penangianus* Foxw., **S74** 185; large tree; coastal hill forest; Pn, Kl, Pk, Ph, Jh, Sp.

92.3.4 **Dipterocarpus chartaceus** Symington, **S74** 169, **FMi9** 304; *Dipterocarpus skinneri auct. non* King, **FMP1** 214 in part; *Dipterocarpus skinneri* King var. *hirtus* Ridl., **FMP1** 215; large tree; seasonally flooded lowland forest.

92.3.5 **Dipterocarpus concavus** Foxw., **S74** 173, **FMi9** 322; large buttressed tree; lowland forest; Pk and Ph northward.

92.3.6 **Dipterocarpus coriaceus** Slooten, **S74** 171, **FMi9** 324; tree; peat swamp forest; Pk, Ph.

92.3.7 **Dipterocarpus cornutus** Dyer, **FMP1** 215, **S74** 172, **FMi9** 312; large tree; lowland and hill forest to 1000 m.

92.3.8 **Dipterocarpus costatus** Gaertn.*f.*, **FMP1** 217, **S74** 173, **FMi9** 321; large tree; lowland forest; NS northward.

92.3.9 **Dipterocarpus costulatus** Slooten, **S74** 174, **FMi9** 310; tree; lowland forest; widespread.

92.3.10 **Dipterocarpus crinitus** Dyer, **FMP1** 214, **S74** 175, **FMi9** 299; tree; lowland and hill forest to 850 m; widespread.

92.3.11 **Dipterocarpus dyeri** Pierre, **S74** 176, **FMi9** 315; large tree; lowland forest; Ps, Kd.

92.3.12 **Dipterocarpus elongatus** Korth., **FMi9** 312; *Dipterocarpus apterus* Foxw., **S74** 167; tree; lowland forest; mostly east coast, Kl to Sp.

92.3.13 **Dipterocarpus eurhynchus** Miq., **FMi9** 324; *Dipterocarpus appendiculatus* Scheff., **S74** 167; tree; lowland forest; Tg, Ph, NS, Jh.

92.3.14 **Dipterocarpus fagineus** Vesque, **FMP1** 216, **FMI9** 315; *Dipterocarpus pseudofagineus* Foxw., **S74** 186; tree; lowland and hill forest; Pn, Tg, Pk, Ph.

92.3.15 **Dipterocarpus gracilis** Blume, **S74** 177, **FMI9** 301; tree; lowland forest; widespread.

92.3.16 **Dipterocarpus grandiflorus** (Blanco) Blanco, **FMP1** 216, **S74** 178, **FMI9** 317; very large buttressed tree; lowland forest; widespread.

92.3.17 **Dipterocarpus hasseltii** Blume, **S74** 180, **FMI9** 306; large tree; lowland forest; commoner in the north.

92.3.18 **Dipterocarpus kerrii** King, **FMP1** 215, **S74** 181, **FMI9** 305; large tree; lowland forest; Ml and Ph northward.

92.3.19 **Dipterocarpus kunstleri** King, **FMP1** 217, **S74** 182, **FMI9** 309; big tree; lowland forest; widespread.

92.3.20 **Dipterocarpus lowii** Hook.*f.*, **FMP5** 291, **S74** 183, **FMI9** 313; tree; lowland forest; scattered.

92.3.21 **Dipterocarpus oblongifolius** Blume, **FMP1** 216, **S74** 184, **FMI9** 317; large tree; banks of fast-flowing rivers; mostly east of Main Range.

92.3.22 **Dipterocarpus obtusifolius** Teijsm. *ex* Miq., **S74** 184, **FMI9** 304; medium-sized tree; *Schima*-bamboo forest; Ps.

92.3.23 **Dipterocarpus palembanicus** Slooten, **S74** 185, **FMI9** 318; tree; lowland and hill forest to 650 m; Tg, Jh, Sp.

92.3.24 **Dipterocarpus perakensis** P.S. Ashton, **FMI9** 325; *Dipterocarpus alatus auct. non* Roxb., **S74** 166; large tree; lowland forest on coastal hills; Pn, Pk; endemic.

92.3.25 **Dipterocarpus retusus** Blume, **S74** 187, **FMI9** 308; medium-sized tree; hill forest at 800–1300 m.

92.3.26 **Dipterocarpus rigidus** Ridl., **FMP1** 217, **S74** 187, **FMI9** 310; tree; coastal hill forest; Tg southward.

92.3.27 **Dipterocarpus rotundifolius** Foxw., **S74** 188, **FMI9** 304; tree; lowland forest; mostly east coast south of Tg; endemic.

92.3.28 **Dipterocarpus sarawakensis** Slooten, **FMI9** 323; tree; lowland forest; once from Tg.

92.3.29 **Dipterocarpus sublamellatus** Foxw., **S74** 92, **FMI9** 322; tree; lowland forest; widespread.

92.3.30 **Dipterocarpus verrucosus** Foxw. *ex* Slooten, **S74** 189, **FMi9** 297; tree; lowland forest; commoner in the south.

92.4.1 **Dryobalanops oblongifolia** Dyer ssp. **occidentalis** P.S. Ashton, **FMi9** 373; *Dryobalanops oblongifolia* Dyer, **S74** 196; *Dryobalanops beccariana* Ridl., **FMP1** 211; big tree; swampy lowland forest; Pk northward.

92.4.2 **Dryobalanops sumatrensis** (J.F. Gmel.) Kosterm., **K57** 346; *Dryobalanops aromatica* C.F. Gaertn., **FMP1** 210, **S74** 194, **FMi9** 375; tree to 50 m tall; gregarious in sandy lowland forest; Tg, Ph, Sl, NS, Jh.

92.5.1 **Hopea apiculata** Symington, **S74** 120, **FMi9** 431; small tree; lowland forest; Pk.

92.5.2 **Hopea auriculata** Foxw., **S74** 121, **FMi9** 413; small tree; hill forest to 700 m; Ph, Jh; endemic.

92.5.3 **Hopea beccariana** Burck, **S74** 122, **FMi9** 407; *Balanocarpus ovalifolius* Ridl., **FMP1** 247 in part; *Hopea pierrei auct. non* Hance, **FMP1** 238 in part; large buttressed tree; lowland and hill forest to 1200 m; widespread.

92.5.4 **Hopea bilitonensis** P.S. Ashton, **FMi9** 433; small stilt-rooted tree; on limestone; once from Pk.

92.5.5 **Hopea bracteata** Burck, **FMi9** 414; *Balanocarpus curtisii* King, **FMP1** 246; *Hopea minima* Symington, **S74** 133; small tree; ridges to 650 m; Pn, Pk.

92.5.6 **Hopea coriacea** Burck, **FMi9** 398; *Hopea kelantanensis* Symington, **S74** 130; tall buttressed tree; lowland forest, often near rivers; Kl, Tg, Ph.

92.5.7 **Hopea dryobalanoides** Miq., **S74** 123, **FMi9** 402; tall buttressed tree; lowland forest; widespread.

92.5.8 **Hopea dyeri** F. Heim, **S74** 124, **FMi9** 407; *Hopea pierrei auct. non* Hance, **FMP1** 238 in part; medium-sized tree; lowland and hill forest to 1000 m; widespread.

92.5.9 **Hopea ferrea** Laness., **S74** 124, **FMi9** 421; *Balanocarpus anomalus* King, **FMP1** 247; small gnarled tree; mostly on limestone; Ps, P. Langkawi, Kd.

92.5.10 **Hopea ferruginea** Parijs, **S74** 125, **FMi9** 404; *Hopea micrantha auct. non* Hook.*f.*, **FMP1** 237 in part; stilt-rooted/buttressed tree; lowland and hill forest to 750 m; Pk and Ph southward.

92.5.11 **Hopea glaucescens** Symington, **S74** 126, **FMi9** 429; medium-sized tree; lowland forest to 500 m; Kd, Pk, Ph, Jh; endemic.

92.5.12 **Hopea griffithii** Kurz, **S74** 127, **FMi9** 406; medium-sized tree; lowland forest; widespread.

92.5.13 **Hopea helferi** (Dyer) Brandis, **S74** 128, **FMI9** 418; large tree; lowland forest; P. Langkawi, Kd, Pk.

92.5.14 **Hopea johorensis** Symington, **S74** 130, **FMI9** 404; stilt-rooted tree; lowland forest; East Jh; endemic.

92.5.15 **Hopea kerangasensis** P.S. Ashton, **FMI9** 401; medium-sized tree; lowland forest on sandy soils; Tg, Ph.

92.5.16 **Hopea latifolia** Symington, **S74** 131, **FMI9** 404; medium-sized tree; lowland forest, including limestone; widespread.

92.5.17 **Hopea mengerawan** Miq., **FMP1** 238, **S74** 132, **FMI9** 400; tall buttressed tree; swampy lowland forest; Ph and NS southward.

92.5.18 **Hopea montana** Symington, **S74** 133, **FMI9** 413; medium-sized tree; lower montane forest to 1200 m; Kl, Pk.

92.5.19 **Hopea myrtifolia** Miq., **S74** 134, **FMI9** 408; medium-sized tree; lowland forest; Pk and Ph southward.

92.5.20 **Hopea nervosa** King, **FMP1** 236, **S74** 135, **FMI9** 410; medium-sized tree; lowland forest; widespread.

92.5.21 **Hopea nutans** Ridl., **FMP1** 235, **S74** 136, **FMI9** 424; largish buttressed tree; swampy lowland forest; east coast, Tg southward.

92.5.22 **Hopea odorata** Roxb., **S74** 137, **FMI9** 422; tall buttressed tree; lowland forest near rivers; Tg and Pk northward.

92.5.23 **Hopea pachycarpa** (F. Heim) Symington, **FMI9** 433; *Balanocarpus pubescens* Ridl., **FMP1** 247; *Hopea resinosa* Symington, **S74** 141; tree; lowland forest; Ph, Jh.

92.5.24 **Hopea pedicellata** (Brandis) Symington, **S74** 138, **FMI9** 408; *Hopea pierrei auct. non* Hance, **FMP1** 238 in part; medium-sized tree; hill forest to 750 m; Tg and Pk northward.

92.5.25 **Hopea pierrei** Hance, **S74** 139, **FMI9** 405; medium-sized tree; ridges to 700 m; Ph, Sl, NS.

92.5.26 **Hopea polyalthioides** Symington, **S74** 140, **FMI9** 431; small tree; lowland forest; Jh; endemic.

92.5.27 **Hopea pubescens** Ridl., **FMP1** 239, **S74** 140, **FMI9** 397; medium-sized tree; lowland forest; Kl, Ph; endemic.

92.5.28 **Hopea sangal** Korth., **S74** 141, **FMI9** 420; *Hopea curtisii* King, **FMP1** 236; *Hopea globosa* Brandis, **FMP1** 236; *Hopea lowii* Dyer *ex* Brandis, **FMP1** 237; largish tree; lowland forest to 500 m; widespread.

92.5.29 **Hopea semicuneata** Symington, **S74** 143, **FMı9** 426; tall buttressed tree; lowland forest to 500 m; Tg, Pk, Ph, NS, Ml.

92.5.30 **Hopea subalata** Symington, **S74** 143, **FMı9** 413; small tree; lowland forest; Kanching F.R., Sl; endemic.

92.5.31 **Hopea sublanceolata** Symington, **S74** 144, **FMı9** 411; medium to large tree; lowland forest; Kd, Kl, Pk, Ph; endemic.

92.5.32 **Hopea sulcata** Symington, **S74** 145, **FMı9** 399; medium-sized tree; lowland forest to 400 m; Tg, Pk, Sl, Jh; endemic.

92.6.1 **Neobalanocarpus heimii** (King) P.S. Ashton, **FMı9** 388; *Balanocarpus heimii* King, **FMP1** 247, **S74** 147; very large buttressed tree; lowland and hill forest to 1000 m; widespread.

92.7.1 **Parashorea densiflora** Slooten & Symington, **S74** 100, **FMı9** 380; large tree; lowland forest below 500 m; scattered widely; endemic.

92.7.2 **Parashorea globosa** Symington, **S74** 101, **FMı9** 381; large tree; lowland forest; Pk.

92.7.3 **Parashorea stellata** Kurz, **FMP1** 234, **FMı9** 383; *Parashorea lucida* [*non* (Miq.) Kurz] Slooten, **S74** 102; medium to large tree, lowland and hill forest to 650 m; Tg and Pk northward.

92.8.1 **Shorea acuminata** Dyer, **FMP1** 225, **S74** 65, **FMı9** 535; large buttressed tree to 50 m tall; lowland forest; Pk and Tg southward.

92.8.2 **Shorea assamica** Dyer ssp. **globifera** (Ridl.) Symington, **S74** 31, **FMı9** 491; *Shorea globifera* Ridl., **FMP1** 232; large buttressed tree; lowland and hill forest to 1000 m; Pk and Ph northward.

92.8.3 **Shorea atrinervosa** Symington, **S74** 9, **FMı9** 457; large tree; lowland forest; Tg, Ph, Jh.

92.8.4 **Shorea balanocarpoides** Symington, **S74** 47, **FMı9** 475; small to middling tree; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Jh.

92.8.5 **Shorea bentongensis** Foxw., **S74** 33, **FMı9** 494; large buttressed tree; lowland forest; Sl, Ph, Jh; endemic.

92.8.6 **Shorea blumutensis** Foxw., **S74** 49, **FMı9** 480; large tree; lowland forest below 500 m; Jh.

92.8.7 **Shorea bracteolata** Dyer, **FMP1** 229, **S74** 34, **FMı9** 496; medium to large tree; coastal hills to 600 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

92.8.8 **Shorea ciliata** King, **FMP1** 229, **S74** 16, **FMı9** 450; medium-sized tree; hill and lower montane forest to 1200 m; Pn and Main Range; endemic.

92.8.9 **Shorea collina** Ridl., **FMP1** 231, **S74** 12, **FMi9** 447; medium to large tree; lowland forest; East Coast, Tg southwards; endemic.

92.8.10a **Shorea curtisii** Dyer *ex* King ssp. **curtisii**, **FMP1** 223, **S74** 67, **FMi9** 541; large tree; ridges to 850 m; throughout.

92.8.10b **Shorea curtisii** Dyer *ex* King ssp. **grandis** P.S. Ashton, **FMi9** 543; *Shorea sp. B*, **S74** 95; large tree; lowland forest; Pk; endemic subspecies.

92.8.11 **Shorea dasyphylla** Foxw., **S74** 69, **FMi9** 546; moderately big tree; lowland and hill forest to 1000 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

92.8.12 **Shorea dealbata** Foxw., **S74** 35, **FMi9** 485; medium-sized tree; lowland forest; Ph (Kuantan district).

92.8.13 **Shorea exelliptica** Meijer, **FMi9** 455; *Shorea ? elliptica*, **S74** 13; tall buttressed tree; lowland forest; Kd, Tg, Pk, Ph, Jh.

92.8.14 **Shorea faguetiana** F. Heim, **S74** 50, **FMi9** 484; *Shorea ridleyana* King, **FMP1** 226 in part; medium to large buttressed tree; mostly in the hills to 700 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

92.8.15 **Shorea falcifera** Dyer *ex* Brandis, **FMi9** 456; medium-sized tree; coastal hills; Tg, Ph.

92.8.16 **Shorea farinosa** C.E.C. Fisch., **S74** 36, **FMi9** 487; large tree; lowland forest; Ps, Kl (presence somewhat doubtful).

92.8.17 **Shorea foxworthyi** Symington, **S74** 14, **FMi9** 453; tall buttressed tree; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Sl, Jh.

92.8.18 **Shorea gibbosa** Brandis, **FMP1** 229, **S74** 51, **FMi9** 482; very tall buttressed tree; lowland forest; Jh, Sp.

92.8.19 **Shorea glauca** King, **FMP1** 223, **S74** 15, **FMi9** 461; medium to large tree; coastal hills to 600 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh.

92.8.20 **Shorea gratissima** (Wall. *ex* Kurz) Dyer, **FMP1** 226, **S74** 36, **FMi9** 487; large tree; lowland forest; Kl, Sl, Sp.

92.8.21 **Shorea guiso** (Blanco) Blume, **S74** 16, **FMi9** 447; large buttressed tree; lowland forest; widespread.

92.8.22 **Shorea hemsleyana** (King) King *ex* Foxw., **S74** 70, **FMi9** 536; *Pachychlamys hemsleyanus* (King) Ridl., **FMP1** 234; tree; peat swamp forest; Pk.

92.8.23 **Shorea henryana** Pierre, **FMi9** 489; *Shorea sericeiflora* C.E.C. Fisch. & Hutch., **S74** 41; large buttressed tree; lowland forest; Ps, P. Langkawi, Kd.

92.8.24 **Shorea hopeifolia** (F. Heim) Symington, **S74** 52, **FMi9** 482; *Shorea ridleyana* King, **FMP1** 226 in part; *Hopea albescens* Ridl., **FMP1** 236; very tall buttressed tree; lowland forest to 600 m; Kl and Pk southward.

92.8.25 **Shorea hypochra** Hance, **S74** 37, **FMi9** 494; *Shorea crassifolia* Ridl., **FMP1** 231; very large tree; lowland forest; Sl and Ph northward.

92.8.26 **Shorea inappendiculata** Burck, **FMi9** 455; large buttressed tree; lowland forest; Jh.

92.8.27 **Shorea johorensis** Foxw., **S74** 72, **FMi9** 513; large buttressed tree; lowland forest; Jh.

92.8.28 **Shorea kuantanensis** P.S. Ashton, **FMi9** 472; medium-sized tree; lowland forest; Bt Goh F.R., Ph; endemic.

92.8.29 **Shorea kunstleri** King, **FMP1** 228, **S74** 72, **FMi9** 519; large buttressed tree; lowland and hill forest to 800 m; Kl, Tg, Pk, Ph.

92.8.30 **Shorea laevis** Ridl., **FMP1** 232, **S74** 18, **FMi9** 461; vast buttressed tree; lowland and hill forest to 1000 m; Kd and Ph southward.

92.8.31 **Shorea lamellata** Foxw., **S74** 39, **FMi9** 493; large tree; lowland and hill forest to 650 m; Pk.

92.8.32 **Shorea lepidota** (Korth.) Blume, **S74** 73, **FMi9** 538; large buttressed tree; lowland forest; Kd, Pn, Tg, Pk, Ph, NS, Ml, Jh.

92.8.33 **Shorea leprosula** Miq., **FMP1** 222, **S74** 75, **FMi9** 540; large buttressed tree; lowland and hill forest to 700 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

92.8.34 **Shorea longisperma** Roxb., **FMP1** 233, **FMi9** 481; *Shorea resina-nigra* Foxw., **S71** 56; very large buttressed tree; lowland to montane forest at 1400 m; widespread.

92.8.35 **Shorea lumutensis** Symington, **S74** 19, **FMi9** 453; medium to large tree; coastal hills; Pk, ?Jh; ?endemic.

92.8.36 **Shorea macrantha** Brandis, **S74** 77, **FMi9** 536; tree of middle size; peat swamp forest; Pk, Ph, Jh.

92.8.37 **Shorea macroptera** Dyer, **FMP1** 225, **S74** 78, **FMi9** 532; large tree; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

92.8.38 **Shorea materialis** Ridl., **FMP1** 227, **S74** 29, **FMi9** 456; medium-sized tree; heath forest; Tg, Ph, Jh.

92.8.39 **Shorea maxima** (King) Symington, **S74** 53, **FMi9** 478; *Balanocarpus maximus* King, **FMP1** 248; small to medium-sized tree; lowland and hill forest to 1300 m; Pk and Ph southward; endemic.

92.8.40 **Shorea maxwelliana** King, **FMP1** 227, **S74** 21, **FMi9** 465; *Shorea alba* Ridl., **FMP1** 230; *Shorea barbata* Brandis, **FMP1** 230; *Shorea utilis* King, **FMP1** 230; *Balanocarpus ovalifolius* Ridl., **FMP1** 247 in part; tall buttressed tree; lowland and hill forest to 700 m; Pn and Tg southward.

92.8.41 **Shorea multiflora** (Burck) Symington, **S74** 54, **FMi9** 475; *Hopea multiflora* (Burck) Brandis, **FMP1** 237; *Balanocarpus penangianus* (F. Heim) King, **FMP1** 246; small to medium-sized tree; lowland and hill forest to 700 m; throughout.

92.8.42 **Shorea ochrophloia** Strugnell *ex* Symington, **S74** 23, **FMi9** 447; large buttressed tree; lowland forest; widespread.

92.8.43a **Shorea ovalis** (Korth.) Blume ssp. **ovalis**, **S74** 80, **FMi9** 548; *Shorea furfuracea* (*non* Miq.) Brandis, **FMP1** 232; large tree; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

92.8.43b **Shorea ovalis** (Korth.) Blume ssp. **sericea** (Dyer) P.S. Ashton, **FMi9** 551; *Shorea sericea* Dyer, **FMP1** 224; *Shorea rigida* Brandis, **FMP1** 223; large tree; widespread.

92.8.44 **Shorea ovata** Dyer *ex* Brandis, **S74** 82, **FMi9** 545; small to medium-sized tree; hills and ridges to 1500 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.

92.8.45 **Shorea palembanica** Miq., **S74** 83, **FMi9** 513; tree, rarely of great size; swampy lowland forest; Tg, Pk, Ph, Jh.

92.8.46a **Shorea parvifolia** Dyer ssp. **parvifolia**, **FMP1** 224, **S74** 85, **FMi9** 546; *Shorea scutulata* King, **FMP1** 222; large tree; common in lowland and hill forest to 800 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

92.8.46b **Shorea parvifolia** Dyer ssp. **velutinata** P.S. Ashton, **FMi9** 547; large tree; lowland forest; Ph, Jh.

92.8.47 **Shorea pauciflora** King, **FMP1** 228, **S74** 87, **FMi9** 511; large buttressed tree; lowland and hill forest to 700 m; throughout.

92.8.48 **Shorea peltata** Symington, **S74** 56, **FMi9** 473; small tree; lowland forest; NW Jh.

92.8.49 **Shorea platycarpa** F. Heim, **S74** 88, **FMi9** 541; *Shorea palustris* Ridl., **FMP1** 224; large buttressed tree; swamp forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

92.8.50 **Shorea platyclados** Slooten *ex* Foxw., **S74** 89, **FMi9** 515; large tree; hill and mountains to 1300 m; Kl, Tg, Pk, Ph, Sl, NS.

92.8.51 **Shorea resinosa** Foxw., **S74** 40, **FMi9** 496; large tree; lowland forest to 500 m; Pk and Kl to Jh.

92.8.52 **Shorea roxburghii** G. Don, **FMi9** 493; *Shorea talura* Roxb., **S74** 42; tree, sometimes big; lowlands, sometimes on limestone; Ps, P. Langkawi, Kd.

92.8.53 **Shorea scrobiculata** Burck, **FMi9** 449; *Shorea meadiana* Symington, **S74** 22; medium-sized tree; lowland and hill forest to 700 m; Tg, Pk, Ph.

92.8.54 **Shorea siamensis** Miq., **FMi9** 466; *Pentacme malayana* King, **FMP1** 220; *Pentacme siamensis* (Miq.) Kurz, **S74** 105, **C14** 115; small gnarled tree; rocky headlands, limestone; Ps, P. Langkawi.

92.8.55a **Shorea singkawang** (Miq.) Miq. ssp. **scabrosa** P.S. Ashton, **FMi9** 537; *Shorea sp. C*, **S74** 95; small tree; forest near the sea; Tg, Ph; endemic subspecies.

92.8.55b **Shorea singkawang** (Miq.) Miq. ssp. **singkawang**, **S74** 92, **FMi9** 537; *Pachychlamys thistletonii* (King) Ridl., **FMP1** 233; small tree; lowland forest below 400 m; Kd and Kl to Jh.

92.8.56 **Shorea submontana** Symington, **S74** 24, **FMi9** 450; *Shorea costata* [*non* (Correa) Presl] King, **FMP1** 231; large buttressed tree; mostly hill forest at 800–1000 m; Pn, Tg, Pk, Ph, Sl; endemic.

92.8.57 **Shorea sumatrana** (Slooten *ex* Thorenaar) Symington *ex* Desch, **S74** 25, **FMi9** 453; *Isoptera borneensis auct. non* Scheff. *ex* Burck, **FMP1** 245; medium to large tree; usually on river banks; Kd, Tg, Ph, Sl, Jh.

92.8.58 **Shorea teysmanniana** Dyer *ex* Brandis, **S74** 94, **FMi9** 538; medium-sized buttressed tree; peat swamp forest; Sl.

92.8.59 **Shorea uliginosa** Foxw., **FMi9** 539; *Shorea rugosa* F. Heim var. *uliginosa* (Foxw.) Symington, **S74** 91; large buttressed tree; peat swamp forest; Pk, Sl.

92.9.1 **Vatica bella** Slooten, **S74** 218, **FMi9** 352; tree to 50 m tall; lowland forest; Pk and Ph southward; endemic.

92.9.2 **Vatica cinerea** King, **S74** 218, **FMi9** 360; *Synaptea lancaviensis* (Ridl.) Ridl., **FMP1** 241; *Synaptea cinerea* (King) Ridl., **FMP1** 243; small to medium-sized tree; lowland and hill forest to 600 m, including limestone; Ps, P. Langkawi, Ps.

92.9.3 **Vatica cuspidata** (Ridl.) Symington, **S74** 219, **FMi9** 367; *Synaptea maingayi* (Dyer) Ridl., **FMP1** 240 in part; *Synaptea cuspidata* Ridl., **FMP1** 242; medium to large tree; lowland ridge forest often near the sea; widespread; endemic.

92.9.4 **Vatica flavida** Foxw., **S74** 220, **FMi9** 359; medium-sized tree; swampy lowland forest; Pk; endemic.

92.9.5 **Vatica havilandii** Brandis, **S74** 220, **FMi9** 351; tree; lowland and hill forest; Tg, Pk, Ph.

92.9.6 **Vatica heteroptera** Symington, **S74** 221, **FMi9** 359; medium-sized tree; lower montane forest at 1000–1300 m; Pk, Ph; endemic.

92.9.7 **Vatica hullettii** (Ridl.) P.S. Ashton, **FMi9** 358; *Vatica stipulata* Ridl., *nom. illeg.*, **FMP1** 244, **S74** 229; *Otophora hullettii* (Ridl.) Ridl., **FMP1** 494; small tree; lowland forest; NS, Ml, Jh; endemic.

92.9.8 **Vatica lobata** Foxw., **S74** 221, **FMi9** 358; small tree; lowland forest near streams; Tg, Ph, Jh; endemic.

92.9.9 **Vatica lowii** King, **S74** 222, **FMi9** 369; *Synaptea lowii* (King) Ridl., **FMP1** 241 in part; small to medium-sized tree; lowland and hill forest to 750 m; Kl, Pk.

92.9.10 **Vatica maingayi** Dyer, **S74** 223, **FMi9** 369; *Synaptea maingayi* (Dyer) Ridl., **FMP1** 240 in part; tree; lowland forest to 500 m; widespread.

92.9.11 **Vatica mangachapoi** Blanco, **FMi9** 364; *Synaptea reticulata* [*non* Thwaites] (King) Ridl., **FMP1** 243; *Vatica patula* Symington, **S74** 226; tree; lowland and hill forest; Kd, Kl, Tg, Pk.

92.9.12 **Vatica nitens** King, **S74** 223, **FMi9** 367; *Synaptea nitens* (King) Ridl., **FMP1** 241; tree; lowland and hill forest to 600 m; widespread.

92.9.13 **Vatica odorata** (Griff.) Symington, **S74** 224, **FMi9** 360; *Synaptea dyeri* (Pierre *ex* Laness.) Pierre, **FMP1** 240; *Synaptea faginea* (Dyer) Pierre, **FMP1** 242; tree; lowland forest, mostly coastal; Ph and NS northwards.

92.9.14 **Vatica pallida** Dyer, **FMP1** 244, **S74** 225, **FMi9** 358; small tree; lowland forest to 350 m; Pn; endemic.

92.9.15 **Vatica pauciflora** (Korth.) Blume, **FMi9** 351; *Vatica kelsallii* Ridl., **FMP1** 244; *Pachynocarpus umbonatus auct. non* Hook.*f.*, **FMP1** 249 in part; *Pachynocarpus wallichii* (Dyer) King, **FMP1** 250 in part; *Pachynocarpus ridleyanus auct. non* (Brandis) T. Anderson., **FMP1** 250 in part; *Vatica wallichii* Dyer, **S74** 230; small or medium-sized tree; swampy lowland forest; widespread.

92.9.16 **Vatica perakensis** King, **S74** 226, **FMi9** 367; *Synaptea perakensis* (King) Ridl., **FMP1** 242; small to medium-sized tree; lowland and hill forest to 600 m; Kd, Pk.

92.9.17 **Vatica ridleyana** Brandis, **S74** 227, **FMi9** 352; *Pachynocarpus ridleyanus* (Brandis) T. Anderson., **FMP1** 250 in part; medium-sized tree, lowland forest; Sp.

92.9.18 **Vatica scortechinii** (King) Brandis, **FMP1** 244, **S74** 227, **FMi9** 357; medium-sized tree; lowland and hill forest to 1800 m; Tg, Pk, Ph, Sl; endemic.

92.9.19 **Vatica stapfiana** (King) Slooten, **S74** 228, **FMi9** 349; *Pachynocarpus stapfianus* King, **FMP1** 249; *Pachynocarpus umbonatus auct. non* Hook.*f.*, **FMP1** 249 in part; *Pachynocarpus verrucosus auct. non* F. Heim, **FMP1** 249 in part; medium-sized tree; lowland forest; widespread.

92.9.20 **Vatica umbonata** (Hook.*f.*) Burck, **FMi9** 349; *Pachynocarpus umbonatus* Hook.*f.*, **FMP1** 249 in part; *Pachynocarpus verrucosus* F. Heim, **FMP1** 249 in part; tree; lowland and hill forest; Tg, Ph.

92.9.21 **Vatica venulosa** Blume, **FMi9** 350; *Vatica kunstleri* (King) Brandis, **FMP1** 243; *Vatica bancana* Scheff., **S74** 217; small tree; swampy lowland forest; Pk, Ph.

93. DROSERACEAE

93.1.1 **Drosera burmannii** Vahl, **FMP1** 688, **FMi4** 378; rosette herb to 30 cm tall; damp sandy spots, lowlands and mountains; widespread.

93.1.2 **Drosera indica** L., **FMP1** 688, **FMi4** 379; herb to 30 cm tall; damp sandy spots; P. Langkawi, Pn.

93.1.3 **Drosera spathulata** Labill., **FMi4** 379, **V15** 595; rosette herb to 20 cm tall; once from Gg Jerai, Kd.

94. EBENACEAE

94.1.1 **Diospyros adenophora** Bakh., **TFM3** 60; tree to 10 m tall; lowland forest, also on limestone; Kl, Ph, NS; endemic.

94.1.2 **Diospyros andamanica** (Kurz) Bakh., **TFM3** 61; *Maba racemosa* Ridl., **FMP5** 320; tree to 20 m tall; lowland forest, including that on limestone; Kl, Ph, Sl, NS, Ml, Jh.

94.1.3 **Diospyros apiculata** Hiern, **FMP2** 285, **TFM3** 61; tree to 18 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh.

94.1.4 **Diospyros areolata** King & Gamble, **FMP2** 292, **TFM3** 63; tree to 50 m tall; lowland and hill forest to 700 m; Kd, Pn, Pk, Ph, Sl, NS, Jh.

94.1.5 **Diospyros argentea** Griff., **FMP2** 289, **TFM3** 63; tree to 11 m tall; lowland and hill forest to 800 m; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

94.1.6 **Diospyros bibracteata** Bakh., **TFM3** 63; tree to 20 m tall; lowland, often disturbed, forest to 500 m; Ps, P. Langkawi, Kd, Kl, Pk, Ph; endemic.

94.1.7 **Diospyros blumutensis** Ng, **TFM3** 64; slender monopodial treelet to 3 m tall; lowland forest at 400 m; known only from type, Gg Belumut, Jh; endemic.

94.1.8 **Diospyros borneensis** Hiern, **TFM3** 64; tree to 13 m tall; lowland forest; Pk, Jh.

94.1.9 **Diospyros buxifolia** (Blume) Hiern, **TFM3** 64; *Diospyros microphylla* Bedd., **FMP2** 283; tree to 35 m tall; lowland and hill forest to 600 m; throughout.

94.1.10 **Diospyros cauliflora** Blume, **TFM3** 64; *Diospyros caliginosa* Ridl., **FMP2** 295; *Diospyros trunciflora* Ridl., **FMP2** 295; small tree to 17 m tall; lowland forest, sometimes on limestone; Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh.

94.1.11 **Diospyros clavigera** C.B. Clarke, **FMP2** 288, **TFM3** 65; tree to 46 m tall; lowland forest to 500 m; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp; endemic.

94.1.12 **Diospyros confertiflora** (Hiern) Bakh., **TFM3** 65; *Maba perakensis* King & Gamble, **FMP2** 280; tree to 27 m tall; lowland to montane forest at 1250 m; Kd, Pn, Kl, Tg, Ph, Sl, Jh.

94.1.13 **Diospyros conformis** Bakh., **TFM3** 65; tree to 20 m tall; lowland forest; only known from type, Lenggong, Pk; endemic.

94.1.14 **Diospyros confusa** Bakh., **TFM3** 67; tree to 17 m tall; lowland forest; Tg, Jh, Sp.

94.1.15 **Diospyros coriacea** Hiern, **TFM3** 67; tree; lowland forest; thrice from Sp.

94.1.16 **Diospyros daemona** Bakh., **TFM3** 67; tree; lowland forest, once on limestone; Kd, Kl, Ph (once each); endemic.

94.1.17 **Diospyros dictyoneura** Hiern, **TFM3** 68; tree to 20 m tall; lowland and hill forest to 1000 m; Kd, Tg, Pk, Ph, Jh.

94.1.18 **Diospyros diepenhorstii** Miq., **TFM3** 68; *Diospyros pyrifera* Ridl., **FMP2** 294; tree to 17 m tall; lowland forest; Kl, Pk, Ph, Sl, Sp.

94.1.19 **Diospyros elegantissima** Bakh., **TFM3** 70; *Maba elegans* Ridl., **FMP2** 281; tree to 5 m tall; lowland forest; Pk, Ph; endemic.

94.1.20 **Diospyros ellipsoidea** King & Gamble, **FMP2** 290, **TFM3** 70; tree to 14 m tall; lowland forest to 700 m; Pk, Sl, Jh.

94.1.21 **Diospyros ferrea** (Willd.) Bakh., **TFM3** 71; *Maba buxifolia* Pers., **FMP2** 281; tree to 12 m tall; sandy and rocky shores, also on limestone; widespread.

94.1.22 **Diospyros foxworthyi** Bakh., **TFM3** 71; tree to 23 m tall; hill forest to 1100 m; Kl, Tg, Pk, Ph; endemic.

94.1.23 **Diospyros frutescens** Blume, **TFM3** 73; *Diospyros cymosa* Ridl., **FMP2** 293; *Diospyros kunstleri* King & Gamble, **FMP2** 293; tree to 10 m tall; lowland forest; Kl, Tg, Pk, Ph.

94.1.24 **Diospyros gambleana** Bakh., **TFM3** 73; tree; hill forest; twice from Keladang Range, Pk; endemic.

94.1.25 **Diospyros hasseltii** Zoll., **TFM3** 73; *Diospyros brachiata* King & Gamble, **FMP2** 293; *Diospyros horsfieldii* Hiern, **FMP2** 293; tree to 20 m tall; lowland forest; Kd, Pn, Kl, Tg, Pk, Ph.

94.1.26 **Diospyros insidiosa** Bakh., **TFM3** 74; tree to 15 m tall; lowland forest; twice from P. Tioman, Ph; endemic.

94.1.27 **Diospyros ismailii** Ng, **TFM3** 74; tree to 27 m tall; lowland and hill forest to 1000 m; Kd, Tg, Ph, Sl, NS, Jh; endemic.

94.1.28 **Diospyros johorensis** Ng, **TFM3** 74; tree to 17 m tall; lowland forest; known only from type, Gg Panti, Jh; endemic.

94.1.29 **Diospyros kingii** Bakh., **TFM3** 74; small tree; hill forest; thrice from Pk; endemic.

94.1.30 **Diospyros kurzii** Hiern, **FMP2** 286, **TFM3** 76; *Diospyros wrayi* King & Gamble, **FMP2** 283; *Diospyros pubicarpa* Ridl., **FMP2** 286; tree to 30 m tall; lowland forest to 500 m, on limestone as well; Ps, Pk, Ph, Sl.

94.1.31 **Diospyros lanceifolia** Roxb., **TFM3** 76; *Diospyros lucida* Wall. *ex* A.DC., **FMP2** 286; *Diospyros clavigera* C.B. Clarke var. *pachyphylla* (C.B. Clarke) Ridl., **FMP2** 288; tree to 20 m tall; lowland and hill forest to 700 m; throughout.

94.1.32 **Diospyros latisepala** Ridl., **FMP2** 294, **TFM3** 76; tree to 16 m tall; lowland to lower montane forest at 1000 m; throughout.

94.1.33 **Diospyros maingayi** (Hiern) Bakh., **TFM3** 76; *Diospyros bilocularis* Oliv., **FMP2** 288; tree to 40 m tall; lowland and hill forest to 600 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

94.1.34 **Diospyros malabarica** (Descr.) Kotel., **TFM3** 77; *Diospyros siamensis auct. non* Hochr., **FMP2** 288; tree to 37 m tall; open country; Kd, Tg, Pk, Ph.

94.1.35 **Diospyros montana** Roxb., **TFM3** 79; *Diospyros cordifolia* Roxb., **FMP2** 295; tree to 7 m tall; dry lowland forest; P. Langkawi.

94.1.36 **Diospyros nutans** King & Gamble, **FMP2** 294, **TFM3** 79; tree to 17 m tall; lowland and hill forest to 700 m; Kl, Pk, Ph, Sl, NS, Ml, Jh; endemic.

94.1.37 **Diospyros pauciflora** King & Gamble, **FMP2** 290, **TFM3** 79; tree to 10 m tall; lowland and hill forest to 600 m; Tg, Pk, Jh.

94.1.38 **Diospyros penangiana** King & Gamble, **FMP2** 289, **TFM3** 80; tree to 27 m tall; lowland forest to 500 m; Kd, Pn, Kl, Pk, Ph, NS, Ml; endemic.

94.1.39 **Diospyros pendula** Hasselt *ex* Hassk., **TFM3** 80; *Diospyros oleifolia* Wall. *ex* A.DC., **FMP2** 292; tree to 30 m tall; lowland and hill forest to 1100 m; Kd, Pn, Tg, Pk, Ph, Sl, Jh.

94.1.40a **Diospyros pilosanthera** Blanco var. **chikusensis** Ng, **TFM3** 80; tree to 27 m tall; swampy lowland forest; Pk; endemic variety.

94.1.40b **Diospyros pilosanthera** Blanco var. **helferi** (C.B. Clarke) Bakh., **TFM3** 81; *Diospyros helferi* C.B. Clarke, **FMP2** 292; tree to 17 m tall; lowland forest; Ps, Kd, P. Langkawi, Kl.

94.1.40c **Diospyros pilosanthera** Blanco var. **nurii** Ng, **TFM3** 81; tree to 17 m tall; peat swamp forest; Sl; endemic variety.

94.1.40d **Diospyros pilosanthera** Blanco var. **oblonga** (Wall. *ex* G. Don) Ng, **TFM3** 81; *Diospyros oblonga* Wall. *ex* G. Don, **FMP2** 291; tree to 24 m tall; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Pk, Ph, Jh, Sp.

94.1.41 **Diospyros pyrrhocarpa** Miq., **TFM3** 83; *Diospyros reflexa* King & Gamble, **FMP2** 292; tree to 30 m tall; lowland and hill forest to 900 m; Kd, Tg, Pk, Sl, NS, Ml, Jh.

94.1.42 **Diospyros retrofacta** Bakh., **TFM3** 83; tree to 21 m tall; limestone hills; Ps, Kl, Pk, Ph.

94.1.43 **Diospyros ridleyi** Bakh., **TFM3** 84; tree to 30 m tall; lowland and hill forest to 1200 m; Pn, Tg, Ph, Sl, Jh; endemic.

94.1.44 **Diospyros rigida** Hiern, **FMP2** 291, **TFM3** 84; tree to 30 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, Jh.

94.1.45 **Diospyros rufa** King & Gamble, **FMP2** 290, **TFM3** 84; tree to 27 m tall; lowland to lower montane forest at 1300 m; Kd, Kl, Tg, Pk, Ph, NS, Ml, Jh; endemic.

94.1.46 **Diospyros scortechinii** King & Gamble, **FMP2** 284, **TFM3** 86; tree to 20 m tall; hill and montane forest at 400–1500 m; Kl, Tg, Pk, Ph, NS; endemic.

94.1.47 **Diospyros selangorensis** Bakh., **TFM3** 86; small tree; montane forest; known only from type, Gg Ulu Semangkok, Sl; endemic.

94.1.48 **Diospyros siamang** Bakh., **TFM3** 86; tree to 47 m tall; swamp forest; Sl, Jh, Sp.

94.1.49 **Diospyros singaporensis** Bakh., **TFM3** 86; tree to 34 m tall; lowland forest to 600 m; Kd, Pk, Ph, Sl, NS, Ml, Jh; endemic.

94.1.50 **Diospyros styraciformis** King & Gamble, **FMP2** 288, **TFM3** 87; tree to 30 m tall; lowland and hill forest to 1000 m; Ph, Sl, Ml, Jh, Sp.

94.1.51 **Diospyros subrhomboidea** King & Gamble, **FMP2** 283, **TFM3** 87; tree to 8 m tall; lowland and hill forest to 1000 m; Pn, Pk, Sl.

94.1.52 **Diospyros sumatrana** Miq., **TFM3** 87; *Diospyros graciliflora auct. non* Hiern, **FMP2** 284; *Diospyros dumosa* King & Gamble, **FMP2** 285; *Diospyros flavicans* (Wall.) Hiern, **FMP2** 285; *Diospyros tubicalyx* Ridl., **FMP2** 285; *Diospyros hendersonii* Ridl., **FMP5** 320; tree to 30 m tall; lowland to montane forest at 1500 m; common throughout.

94.1.53 **Diospyros tahanensis** Bakh., **TFM3** 89; tree to 20 m tall; lowland forest; Ph.

94.1.54 **Diospyros toposia** Buch.-Ham., **TFM3** 89; tree to 27 m tall; lowland and hill forest to 700 m; Tg, Ph, Jh.

94.1.55 **Diospyros toposioides** King & Gamble, **FMP2** 290, **TFM3** 89; tree to 13 m tall; lowland and hill forest to 700 m; Kd, Kl, Pk, Ph, Sl.

94.1.56 **Diospyros transistoria** Bakh., **TFM3** 90; tree to 30 m tall; lowland forest, sometimes on limestone; P. Langkawi, Pk.

94.1.57 **Diospyros trengganuensis** Ng, **TFM3** 90; tree to 21 m tall; lowland and hill forest; Tg; endemic.

94.1.58 **Diospyros tristis** King & Gamble, **FMP2** 289, **TFM3** 90; tree to 20 m tall; lowland to lower montane forest at 1200 m; Kd, Tg, Pk, Ph, Sl, Jh; endemic.

94.1.59 **Diospyros truncata** Zoll. & Moritzi, **TFM3** 91; tree to 10 m tall; montane forest at 1300–1700 m; Ph.

94.1.60 **Diospyros undulata** Wall. *ex* G. Don, **TFM3** 91; tree to 10 m tall; limestone hills; Ps, Kd, P. Langkawi.

94.1.61a **Diospyros venosa** Wall. *ex* A. DC. var. **olivacea** (King & Gamble *ex* F.N. Williams) Bakh., **TFM3** 93; *Maba olivacea* King & Gamble *ex* F.N. Williams, **FMP2** 279; lowland forest; P. Langkawi, Pk, Ph; endemic variety.

94.1.61b **Diospyros venosa** Wall. *ex* A. DC. var. **venosa**, **TFM3** 93; *Maba venosa* (Wall. *ex* A.DC.) King & Gamble, **FMP2** 279; *Maba merguensis* Hiern, **FMP2** 280; tree to 27 m tall; lowland to lower montane forest at 1300 m; throughout.

94.1.62 **Diospyros wallichii** King & Gamble *ex* F.N. Williams, **FMP2** 291, **TFM3** 93; tree to 20 m tall; lowland and hill forest to 700 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml.

94.1.63 **Diospyros yeobii** Bakh., **TFM3** 94; tree to 20 m tall; lowland forest; Pk, Ph.

95. ELAEAGNACEAE

95.1.1 **Elaeagnus confertus** Roxb., **FMI10** 153 '*conferta*'; *Elaeagnus latifolius* L., **FMP3** 149 '*latifolia*'; liana to 12 m long; hill forest; Pn, Pk.

96. ELAEOCARPACEAE

96.1.1 **Elaeocarpus acmosepalus** Ridl., **FMP1** 314, **TFM4** 86, stilt-rooted tree to 20 m tall; swamp forest; Ph, Sl, Jh.

96.1.2 **Elaeocarpus acronodia** Mast. ssp. **sumatranus** Coode, **C20** 274; tree 5–17 m tall; upper montane forest; (?) once each Gg Rabong, Kl, and Gg Lawit, Tg.

96.1.3 **Elaeocarpus angustifolius** Blume, **TFM4** 86; *Elaeocarpus ganitrus* Roxb., **FMP1** 310; tree to 30 m tall; lowland and hill forest to 1000 m; Kd, Tg, Pk, Ph, Sl.

96.1.4 **Elaeocarpus apiculatus** Mast., **TFM4** 86; tree to 30 m tall; lowland and hill forest to 330 m; Kd, Kl, Tg, Pk; endemic.

96.1.5 **Elaeocarpus cruciatus** Corner, **TFM4** 87; tree to 20 m tall; montane forest at 1200–1800 m; Tg, Ph; endemic.

96.1.6 **Elaeocarpus eriobotryoides** Ridl., **FMP1** 320, **TFM4** 87; tree to 15 m tall; montane forest at 1220–1510 m; Ph/Sl borders; endemic.

96.1.7a **Elaeocarpus ferrugineus** (Jack) Steud. ssp. **ferrugineus, TFM4** 87; *Elaeocarpus jackianus* Wall. ex King, **FMP1** 318; tree to 28 m tall; lowland to lower montane forest at 1200 m; common throughout.

96.1.7b **Elaeocarpus ferrugineus** (Jack) Steud. ssp. **glabrescens** (Mast.) Coode, **C20** 282; *Elaeocarpus glabrescens* Mast., **FMP1** 319, **TFM4** 88; tree to 24 m tall; hill and montane forest at 450–1830 m; Kd, Pn, Tg, Ph, Sl, NS, Jh; endemic subspecies.

96.1.8a **Elaeocarpus floribundus** Blume var. **floribundus**, **FMP1** 313, **TFM4** 88; tree to 30 m tall; lowland to montane forest at 1500 m; Kd, Kl, Pk, Ph, Sl, NS, Jh.

96.1.8b **Elaeocarpus floribundus** Blume var. **tahanensis** (M.R. Hend.) Ng, **TFM4** 88; *Elaeocarpus tahanensis* M.R. Hend., **H34** 74; small tree; montane forest above 1000 m; Fraser's Hill and Gg Tahan, Ph; endemic variety.

96.1.9 **Elaeocarpus fraseri** Coode, **C21** 242; *Elaeocarpus robustus* Roxb. var. *ovalis* Ridl., **FMP1** 313; tree to 12 m tall; montane forest at 1200 m; Fraser's Hill, Ph; endemic.

96.1.10 **Elaeocarpus grandiflorus** Sm., **TFM4** 88; tree to 20 m tall; hill and montane forest to 1200 m; Kd, Ph, Sl.

96.1.11 **Elaeocarpus griffithii** (Wight) A. Gray, **FMP1** 316, **TFM4** 89; *Elaeocarpus paniculatus* Wall., **FMP1** 315; tree usually only to 7 m tall; swampy lowland forest, near rivers; Kd, Pk, Ph, Sl, Jh, Sp.

96.1.12 **Elaeocarpus knuthii** Merr. ssp. **cuspidatus** (Ridl.) Coode, **C20** 287; *Elaeocarpus reticulatus* var. *cuspidatus* Ridl., **FMP1** 321; tree; montane forest at 900–1500 m; Pk, Ph; endemic subspecies.

96.1.13 **Elaeocarpus macrocarpus** Miq., **C19** 98, tree, once from Mersing F.R., Jh.

96.1.14 **Elaeocarpus macrocerus** (Turcz.) Merr., **TFM4** 90; *Elaeocarpus obtusus auct. non* Blume, **FMP1** 317; tree to 45 m tall; tidal swamps and river estuaries; Kd, Tg, Pk, Ph, Sl, NS, Jh.

96.1.15 **Elaeocarpus mastersii** King, **FMP1** 319, **TFM4** 90, **C20** 288; tree to 20 m tall; lowland to montane forest at 2000 m; common throughout.

96.1.16 **Elaeocarpus nanus** Corner, **TFM4** 90, **C20** 292; *Elaeocarpus reticulatus* (*non* Sm.) Ridl., **FMP1** 320; bushy tree to 8 m tall; upper montane forest at 1000–2000 m; Pk, Ph, Sl, Jh; type subspecies endemic.

96.1.17a **Elaeocarpus nitidus** Jack var. **nitidus**, **FMP1** 314, **TFM4** 91; *Elaeocarpus parvifolius* Wall., **FMP1** 310; tree to 24 m tall; lowland to montane forest at 1500 m; common throughout.

96.1.17b **Elaeocarpus nitidus** Jack var. **salicifolius** (King) Ng, **TFM4** 91; *Elaeocarpus salicifolius* King, **FMP1** 313; tree to 10 m tall; lowland forest; Ph, Jh, Sp; endemic variety.

96.1.17c **Elaeocarpus nitidus** Jack var. **velutinus** Ng, **TFM4** 91; tree to 21 m tall; montane forests at 800–1500 m; Kl, Ph, Jh; endemic variety.

96.1.17d **Elaeocarpus nitidus** Jack var. **wrayi** (King) Ng, **TFM4** 91; *Elaeocarpus wrayi* King, **FMP1** 312; tree to 21 m tall; montane forest at 1300–1700 m; Tg, Pk, Ph; endemic variety.

96.1.18 **Elaeocarpus palembanicus** (Miq.) Corner, **TFM4** 91; *Elaeocarpus hullettii* King, **FMP3** 316; *Elaeocarpus leptomischus* Ridl., **FMP3** 320; tree generally to 15 m tall; lowland and hill forest to 900 m; Kd, Pn, Kl, Tg, Ph, Sl, NS, Jh.

96.1.19 **Elaeocarpus pedunculatus** Wall. *ex* Mast., **FMP1** 316, **TFM4** 92; tree to 27 m tall; lowland and hill forest to 670 m; common throughout.

96.1.20 **Elaeocarpus petiolatus** (Jack) Wall., **FMP1** 315, **TFM4** 92; tree to 21 m tall; lowland and hill forest to 500 m; widespread.

96.1.21 **Elaeocarpus polystachyus** Wall. *ex* Müll.Berol., **FMP1** 319, **TFM4** 92; tree to 24 m tall; lowland and hill forest to 1100 m; Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp; endemic.

96.1.22 **Elaeocarpus pseudopaniculatus** Corner, **TFM4** 93; tree to 12 m tall; montane forest; Fraser's Hill and Gg Tahan, Ph.

96.1.23 **Elaeocarpus reticosus** Ridl., **FMP1** 321, **TFM4** 94; shrub to 5 m tall; mountain ridges and summits above 1000 m; Kl, Pk, Ph, Jh; endemic.

96.1.24a **Elaeocarpus robustus** Roxb. var. **collinus** Coode, **C19** 90; tree, montane forest at about 1400 m; Gg Mandi Angin, Tg; endemic variety.

96.1.24b **Elaeocarpus robustus** Roxb. var **megacarpus** Coode, **C19** 90; *Elaeocarpus macrocarpus* (*non* Miq.) Ridl., **FMP1** 321; tree, lowlands to mountains; widespread.

96.1.24c **Elaeocarpus robustus** Roxb. var **robustus**, **FMP1** 313, **TFM4** 94, **C19** 90; tree, lowland and hill forest; widespread.

96.1.25 **Elaeocarpus rugosus** Roxb., **FMP1** 318, **TFM4** 94; *Elaeocarpus kunstleri* King, **FMP1** 317; tree to 39 m tall; lowland and hill forest to 700 m; Tg, Pk, Ph, Sl, Jh, Sp; endemic.

96.1.26 **Elaeocarpus sallehianus** Ng, **TFM4** 95 '*sallehiana*'; tree to 30 m tall; hill forest; Tg, Ph; endemic.

96.1.27a **Elaeocarpus stipularis** Blume var. **latifolius** King, **TFM4** 96 '*latifolia*'; tree to 30 m tall; lowland forest to 300 m; Pk, Sl.

96.1.27b **Elaeocarpus stipularis** Blume var. **stipularis**, **FMP1** 311, **TFM4** 95; tree to 30 m tall; lowland to lower montane forest at 1250 m; throughout.

96.1.28 **Elaeocarpus submonoceras** Miq., **C21** 251; *Elaeocarpus longifolius* Blume var. *fusiformis* Corner, **TFM4** 89; tree to 8 m tall; riverbank tree; Sg Rompin, Ph.

96.1.29 **Elaeocarpus symingtonii** Ng, **TFM4** 96; tree to 7 m tall; mountain tops above 1400 m; Tg, Pk, Ph; endemic.

96.2.1 **Sloanea javanica** (Miq.) Syzyl. *ex* K. Schum., **FMP1** 308, **TFM4** 97; tree to 27 m tall; lowland forest to 450 m; Sl, NS, Jh.

96.2.2 **Sloanea malayana** Coode, **TFM4** 97; tree to 20 m tall; lowland and hill forest to 1000 m; Ph, Sl; endemic.

96.2.3 **Sloanea sigun** (Blume) K. Schum., **TFM4** 97; tree to 36 m tall; montane forest at 1000–1500 m; Ph, Sl.

97. EPACRIDACEAE

97.1.1 **Styphelia malayana** (Jack) Spr., **FMi6** 426, **TFM2** 32; *Leucopogon malayanus* Jack, **FMP2** 223 incl. var. *moluccanus* (*non* Scheff.) Ridl.; shrub to 5 m tall; upper montane forest, lowland sandy heaths; widespread.

98. ERICACEAE

98.1.1 **Agapetes scortechinii** (King & Gamble) Sleumer, **FMi6** 879, **TFM3** 97; *Pentapterygium scortechinii* King & Gamble, **FMP2** 205; sprawling shrub or epiphyte; upper montane forest above 1200 m; Ph; endemic.

98.2.1 **Cheilotheca malayana** Scort. *ex* Hook.*f.*, **FMP2** 222, **K08** 83, **TFM3** 97; *Andresia malayana* (Scort. *ex* Hook.*f.*) Sleumer, **FMi6** 669; fleshy white herbaceous parasite to 25 cm long; hill forest; thrice from Pk (Larut and Maxwell's Hill); endemic.

98.3.1 **Diplycosia elliptica** Ridl., **FMP2** 213, **FMi6** 723, **TFM3** 98; *Diplycosia microphylla auct. non* Becc., **FMP2** 213; *Diplycosia cordifolia* Ridl., **FMP2** 214; epiphytic or terrestrial shrub to 1 m tall; montane forest at 900–1800 m; Kl, Pk, Ph, Sl.

98.3.2 **Diplycosia heterophylla** Blume var. **latifolia** (Blume) Sleumer, **FMP2** 214, **FMi6** 738, **TFM3** 98; *Diplycosia latifolia* Blume, **FMP2** 214; shrub or climber, sometimes epiphytic; montane forest at 1200–1700 m; Kl, Pk, Ph, Sl.

98.3.3a **Diplycosia lancifolia** Ridl. var. **calvescens** Sleumer, **FMP2** 214, **FMi6** 728, **TFM3** 98; shrub; known from type, Gg Tahan, Ph; endemic.

98.3.3b **Diplycosia lancifolia** Ridl. var. **lancifolia**, **FMP2** 214, **FMi6** 728, **TFM3** 98; shrub; known from type, Gg Benom, Ph; endemic.

98.3.4 **Diplycosia pseudorufescens** Sleumer var. **elliptifolia** Sleumer, **FMi6** 711, **TFM3** 98; shrub or small tree to 6 m tall; upper montane forest at 1300–1500 m; Gg Korbu, Pk, Gg Benom, Ph.

98.4.1 **Gaultheria hirta** Ridl., **FMP2** 213, **FMi6** 691, **TFM3** 99; scandent shrub; upper montane forest at 1370–1525 m; twice from Gg Korbu, Pk; endemic.

98.4.2 **Gaultheria leucocarpa** Blume, **FMP2** 212, **FMi6** 692, **TFM3** 99; scandent shrub to 3 m tall; montane forest above 1000 m; Pk, Ph.

98.4.3 **Gaultheria malayana** Airy Shaw, **FMi6** 690, **TFM3** 99; *Gaultheria fragrantissima auct. non* Wall., **FMP2** 212; shrub to 2 m tall; montane forest above 1300 m; Pk, Ph; endemic.

98.5.1 **Lyonia ovalifolia** (Wall.) Drude, **FMi6** 675, **TFM3** 99; *Pieris ovalifolia* (Wall.) D. Don, **FMP2** 215; shrub or small tree to 8 m tall; montane forest above 1200 m; Kd, Pk, Ph.

98.6.1 **Pernettyopsis malayana** King & Gamble, **FMP2** 221, **FMi6** 676, **TFM3** 97; *Pernettyopsis subglabra* King & Gamble, **FMP2** 221; *Pernettyopsis breviflora* (Ridl.) Ridl., **FMP2** 222; epiphytic or terrestrial shrub to 60 cm tall; upper montane forest above 1500 m; Pk, Ph, Sl; endemic.

98.7.1 **Rhododendron hybridogenum** Sleumer, **FMi6** 537; shrub; montane forest; once from Cameron Highlands; endemic.

98.7.2a **Rhododendron jasminiflorum** Hook. var. **jasminiflorum**, **FMP2** 218 in part, **FMi6** 566, **TFM3** 101 in part; scrambling shrub to 2.5 m tall, usually epiphytic; open places at 1100–1500 m; Gg Ledang, Jh; endemic variety.

98.7.2b **Rhododendron jasminiflorum** Hook. var. **oblongifolium** Sleumer, **FMi6** 567; shrub; montane forest; P. Tioman; Gg Belumut, Jh.

98.7.2c **Rhododendron jasminiflorum** Hook. var. **punctatum** Ridl., **FMi6** 566; *Rhododendron jasminiflorum* Hook. var. *maculatum* Ridl., **FMP2** 218; shrub to 3 m tall; montane forest at 850–1800 m; Kd, Pk, Ph; endemic variety.

98.7.3 **Rhododendron javanicum** (Blume) Benn. var. **teysmannii** (Miq.) King & Gamble, **FMi6** 625, **TFM3** 102; *Rhododendron teysmannii* Miq., **FMP2** 216; epiphytic shrub; on riverside trees in the lowlands; Kl, Ph.

98.7.4 **Rhododendron klossii** Ridl., **FMP2** 218, **FMi6** 667, **TFM3** 102; shrub to 4 m tall; rocky ridges in the lowlands; Bt Raka Bintang and Tras, Ph.

98.7.5 **Rhododendron longiflorum** Lindl., **FMP2** 219, **FMi6** 640, **TFM3** 104; *Rhododendron orion* Ridl. var. *aurantiacum* Ridl., **FMP2** 217; terrestrial or epiphytic shrub to 4.5 m tall; lowland and hill forest to 1000 m, also on rocky ridges; Kd, Ph, Sl, Sp.

98.7.6 **Rhododendron malayanum** Jack, **FMP2** 219, **FMi6** 532, **TFM3** 102; epiphytic or terrestrial shrub to 3 m tall; montane forest at 1000–1800 m; Kl, Pk, Ph, Sl, Jh.

98.7.7 **Rhododendron moulmeinense** Hook., **FMP2** 218, **FMi6** 666, **TFM3** 102; *Rhododendron leucobotrys* Ridl., **FMP2** 218; shrub to 10 m tall; montane forest at 1000–1500 m; Gg Jerai, Kd; Cameron Highlands, Ph.

98.7.8 **Rhododendron obscurum** Sleumer, **FMi6** 535; shrub to 3 m tall; montane forest at 2015 m; once from summit of Gg Benom, Ph; endemic (probably of hybrid origin).

98.7.9a **Rhododendron pauciflorum** King & Gamble var. **calocodon** (Ridl.) Sleumer, **FMi6** 591; *Rhododendron calocodon* Ridl., **FMP2** 219; epiphytic shrub; montane forest at 1500–1800 m; Sl; endemic.

98.7.9b **Rhododendron pauciflorum** King & Gamble var. **pauciflorum**, **FMP2** 219, **FMi6** 591, **TFM3** 102; *Rhododendron elegans* Ridl., **FMP2** 220; shrubby epiphyte to 2 m tall; montane forest at 1500–2100 m; Pk, Ph; endemic.

98.7.10 **Rhododendron perakense** King & Gamble, **FMP2** 216, **FMi6** 488, **TFM3** 101; epiphytic or terrestrial shrub to 2 m tall; montane forest at 1800 m; Cameron Highlands, Ph; endemic.

98.7.11 **Rhododendron robinsonii** Ridl., **FMP2** 216, **FMi6** 620, **TFM3** 102; *Rhododendron javanicum auct. non* (Blume) Benn., **FMP2** 216; epiphytic or sometimes terrestrial shrub to 3 m tall; montane forest at 1000–1800 m; Pk, Ph, Sl; endemic.

98.7.12 **Rhododendron seimundii** J.J. Sm., **FMi6** 490, **TFM3** 101; epiphytic or terrestrial shrub to 1.5 m tall; montane forest at about 1500 m; Gg Tahan, Ph; endemic.

98.7.13 **Rhododendron scortechinii** King & Gamble, **FMP2** 219, **FMi6** 490, **TFM3** 102; *Rhododendron orion* Ridl., **FMP2** 217; epiphytic or terrestrial shrub to 2 m tall; upper montane forest above 1500 m; Gg Bubu, Pk; Gg Benom & Gg Ulu Kali, Ph; endemic.

98.7.14 **Rhododendron spathulatum** Ridl., **FMP2** 220, **FMi6** 487, **TFM3** 101; epiphytic or terrestrial shrub to 1.5 m tall; montane forest at 1500–2100 m; Gg Korbu, Pk; Gg Siku, Ph; endemic.

98.7.15 **Rhododendron wrayi** King & Gamble, **FMP2** 217 incl. var. *elliptica* Ridl., **FMi6** 659, **TFM3** 101; *Rhododendron corruscum* Ridl., **FMP2** 217; *Rhododendron dubium* King & Gamble, **FMP2** 221; shrub or tree to 16 m tall; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl; endemic.

98.8.1 **Vaccinium acuminatissimum** Miq., **FMP2** 210, **FMi6** 761, **TFM3** 105; epiphytic or climbing shrub; lowland forest to 460 m; Pk, Sp.

98.8.2a **Vaccinium bancanum** Miq. var. **kunstleri** (King & Gamble) Sleumer, **FMi6** 842; *Vaccinium bancanum* Miq., **FMP2** 209 in part, **TFM3** 107 in part; *Vaccinium breviflos* Ridl., **FMP2** 208; shrub or small treelet, often epiphytic; montane forest; widespread.

98.8.2b **Vaccinium bancanum** Miq. var. **tenuinervium** J.J. Sm., **FMi6** 842; *Vaccinium bancanum* Miq., **FMP2** 209 in part, **TFM3** 107 in part; *Vaccinium wrayi* Ridl., **FMP2** 208; *Vaccinium ardisiiflorum* Ridl., **FMP2** 209; *Vaccinium eburneum* Ridl., **FMP2** 209; shrub or small treelet, often epiphytic; montane forest; widespread.

98.8.3 **Vaccinium bracteatum** Thunb., **FMi6** 801, **TFM3** 104; *Vaccinium malaccense* Wight, **FMP2** 211; *Vaccinium pubicarpum* Ridl., **FMP2** 211; shrub or small tree to 6 m tall; sandy seashores and mountains; commonest on East Coast.

98.8.4 **Vaccinium dialypetalum** J.J.Sm., **FMi6** 753, **TFM3** 105; *Agapetes micrantha* Ridl., **FMP2** 205; *Agapetes perakensis* Ridl., **FMP2** 205; *Agapetes wrayi* Ridl., **FMP2** 205; *Agapetes pubescens* Ridl., **FMP5** 318; epiphytic climber; montane forest above 800 m; Tg, Pk, Ph, Sl, Jh.

98.8.5 **Vaccinium glabrescens** King & Gamble, **FMP2** 208, **FMi6** 804, **TFM3** 105; *Vaccinium longibracteatum* Ridl., **FMP2** 208; shrub, sometimes epiphytic, to 5 m tall; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl; endemic.

98.8.6 **Vaccinium leptanthum** Miq., **FMi6** 764, **TFM3** 107; small, usually epiphytic, shrub; lowland forest; Kl, Tg, Ph, Jh.

98.8.7 **Vaccinium littoreum** Miq., **FMi6** 854, **TFM3** 107; *Vaccinium hasseltii* Miq., **FMP2** 209; shrub, often epiphytic; sandy shores, rocky ridges, montane forest; Kl, Tg, Pk, Ph, Sl, Jh, Sp.

98.8.8 **Vaccinium loranthifolium** Ridl., **FMP2** 208, **FMi6** 853, **TFM3** 105; shrub to 4 m tall; upper montane forest; above 1800 m; Gg Rabong, Kl; Gg Korbu, Pk; Cameron Highlands, Ph; endemic.

98.8.9 **Vaccinium pseudodialypetalum** Ng, **TFM3** 105; epiphytic shrub; montane forest at 1000–1500 m; Sl/Ph border area; endemic.

98.8.10 **Vaccinium scortechinii** King & Gamble, **FMP2** 207, **FMi6** 807, **TFM3** 104; epiphytic or terrestrial shrub; montane forest at 1500–1900 m; Pk, Ph; endemic.

98.8.11 **Vaccinium varingiifolium** (Blume) Miq., **FMi6** 815, **TFM3** 107; *Vaccinium erythrinum* Hook., **FMP2** 211; shrub; montane forest at 1500–1900 m; Gg Bubu, Pk; Gg Mengkuang Lebak, Ph/Sl.

98.8.12a **Vaccinium viscifolium** King & Gamble var. **bicalcaratum** Sleumer, **FMi6** 852, **TFM3** 105; shrub; montane forest; Gg Mandi Angin, Tg; Gg Jasar, Ph; endemic variety.

98.8.12b **Vaccinium viscifolium** King & Gamble var. **viscifolium**, **FMP2** 207, **FMi6** 852, **TFM3** 105; *Vaccinium decorum* Ridl., **FMP2** 207; *Vaccinium perakense* Ridl., **FMP2** 207; shrub to 5 m tall, sometimes epiphytic; hill and montane forest; Kl, Pk, Ph, Sl, NS, Jh.

98.8.13 **Vaccinium whitmorei** Ng, **TFM3** 107; shrub or small tree; montane forest at 1000–1700 m; Gg Ulu Kali and Fraser's Hill, Sl/Ph; endemic.

99. ERYTHROXYLACEAE

99.1.1 **Erythroxylum cuneatum** (Miq.) Kurz, **FMi5** 548, **TFM1** 194; *Erythroxylum burmanicum* Griff., **FMP1** 324; tree to 30 m tall; lowland and hill forest, common near the sea; throughout.

99.1.2 **Erythroxylum kochummenii** Ng, **N02** 235; tree to 30 m tall; lowland and hill forest; Ulu Lebir, Kl, & Ulu Gombak, Sl; endemic.

100. ESCALLONIACEAE

100.1.1 **Itea macrophylla** Wall., **FMP1** 687, **TFM4** 462; small tree; montane forest above 1200 m; Gg Mandi Angin, Tg, and Gg Tahan, Ph.

100.2.1 **Polyosma conocarpa** Ridl., **FMP1** 684, **TFM4** 464; tree to 15 m tall; lowland forest; throughout.

100.2.2 **Polyosma coriacea** King, **FMP1** 685, **TFM4** 465; shrub to 3 m tall; montane forest above 1400 m; Tg, Pk; endemic.

100.2.3 **Polyosma fasciculata** Ridl., **FMP1** 685, **TFM4** 465; tree to 7 m tall; montane forest above 1000 m; Gg Jerai, Kd; endemic.

100.2.4 **Polyosma fragrans** Benn., **FMP1** 684, **TFM4** 465; tree to 17 m tall; lowland to montane forest; Ph, Sl, Jh.

100.2.5 **Polyosma glaucescens** Ridl., **FMP1** 684, **TFM4** 46; tree to 7 m tall; montane forest above 1000 m; Gg Tahan and Gg Tapis, Ph; endemic.

100.2.6 **Polyosma integrifolia** Blume, **FMP1** 683, **TFM4** 466; *Polyosma grandis* Ridl., **FMP1** 683; tree to 14 m tall; montane forest above 1000 m; Pk, Ph, Sl.

100.2.7 **Polyosma kingiana** Schltr., **TFM4** 46; *Polyosma flavovirens* Ridl., **FMP1** 686; tree to 20 m tall; lowland forest; Pn, Kl, Pk, Sl, Sp.

100.2.8 **Polyosma laetevirens** Griff. *ex* King, **FMP1** 685, **TFM4** 467; tree to 17 m tall; lowland and hill forest to 1000 m; Pn, Kl, Pk, Ph, Sl, NS, Jh.

100.2.9 **Polyosma nullii** B.C. Stone, **S48** 258, **TFM4** 467; shrub to 2.5 m tall; montane forest above 1300 m; Genting Highlands, Ph; endemic.

100.2.10 **Polyosma parviflora** King, **TFM4** 468; *Polyosma ilicifolia auct. non* Blume, **FMP1** 683; tree to 8 m tall; montane forest above 1300 m; Tg, Pk, Ph, Sl; endemic.

100.2.11 **Polyosma ridleyi** King, **FMP1** 686, **TFM4** 468; tree to 22 m tall; lowland forest to 600 m; Jh, Sp.

100.2.12 **Polyosma robusta** (Ridl.) L.G. Saw, **TFM4** 468; *Polyosma laetevirens* Griff. *ex* King var. *robusta* Ridl., **FMP1** 686; small tree; montane forest above 1600 m; Gg Tahan, Ph; endemic.

100.2.13 **Polyosma scortechinii** King, **FMP1** 685, **TFM4** 468; tree to 30 m tall; montane forest above 1000 m; Pk, Ph; endemic.

100.2.14 **Polyosma sp.** 1, **TFM4** 469; tree to 13 m tall; lowland forest; once from Gg Lawit, Tg; endemic.

100.2.15 **Polyosma sp.** 2, **TFM4** 469; tree to 15 m tall; lowland forest; once from Jh; endemic.

100.2.16 **Polyosma sp.** 3, **TFM4** 469; tree to 10 m tall; montane forest above 1600 m; Cameron Highlands, Ph; endemic.

101. EUPHORBIACEAE

101.1.1 **Acalypha caturus** Blume, **TFM2** 51; shrub; hill and montane forest; Sl.

101.1.2 **Acalypha indica** L., **FMP3** 274, **TFM2** 51; herb about 30 cm tall; common weed; widespread.

101.1.3 **Acalypha lanceolata** Willd., **TFM2** 51; *Acalypha fallax* Müll.Arg., **FMP3** 274; hairy herb to 1 m tall; waste ground; north of Malaya.

101.1.4 **Acalypha siamensis** Oliv. *ex* Gage, **FMP3** 274, **TFM2** 51; shrub to 4 m tall; open sandy places; Ml and Ph northward.

101.2.1a **Actephila excelsa** (Dalzell) Müll.Arg. var. **acuminata** Airy Shaw, **TFM2** 52; *Actephila excelsa* (Dalzell) Müll.Arg., **FMP3** 196; shrub to 3 m tall; lowland forest, sometimes on limestone; scattered throughout.

101.2.1b **Actephila excelsa** (Dalzell) Müll.Arg. var. **javanica** (Miq.) Pax & K. Hoffm., **TFM2** 52; *Actephila javanica* Miq., **FMP3** 196; shrub about 1 m tall; near the sea, often on islands; P. Langkawi, P. Jarak, P. Tioman, Jh, Sp.

101.2.2 **Actephila ovalis** (Ridl.) Gage, **FMP3** 196, **TFM2** 51; shrub; mostly on limestone; Ps, P. Langkawi, Kd, Pn.

101.3.1 **Agrostistachys gaudichaudii** Müll.Arg., **FMP3** 268, **TFM2** 53; small tree to 15 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Jh, Sp.

101.3.2a **Agrostistachys longifolia** (Wight) Benth. var. **leptostachya** (Pax & K. Hoffm.) Whitmore, **FMP3** 53; small tree to 9 m tall; lowland and hill forest; Kd, Tg, Pk, Ph.

101.3.2b **Agrostistachys longifolia** (Wight) Benth. var. **longifolia**, **FMP3** 53; *Agrostistachys borneensis* Becc., **FMP3** 268; *Agrostistachys sessilifolia* (Kurz) Pax & K. Hoffm., **FMP3** 267; small tree to 9 m tall; lowland to lower montane forest at 1050 m; throughout.

101.4.1 **Alchornea adenophila** Pax & K. Hoffm., **FMP3** 278, **TFM2** 54; shrub; lowland forest; Pk, Ph; endemic.

101.4.2 **Alchornea rhodophylla** Pax & K. Hoffm., **FMP3** 278, **TFM2** 54; shrub to 3 m tall; hill and montane forest; Kd, Pn, Pk, Ph, Sl; endemic.

101.4.3a **Alchornea rugosa** (Lour.) Müll.Arg. var. **macrocarpa** Airy Shaw, **TFM2** 53; shrub; lowland forest; Kl, Ph.

101.4.3b **Alchornea rugosa** (Lour.) Müll.Arg. var. **rugosa**, **TFM2** 53; *Alchornea javensis* (Endl. *ex* Hassk.) Müll.Arg., **FMP3** 278; shrub to 1.5 m tall; lowland forest; Pk northward.

101.4.4 **Alchornea tiliifolia** (Benth.) Müll.Arg., **FMP3** 277, **TFM2** 54; shrub; once from ?Gg Panti, Jh.

101.4.5 **Alchornea villosa** (Benth.) Müll.Arg., **FMP3** 277, **TFM2** 54; shrub; lowland forests and forest margins; Pk and Ph southward.

101.5.1 **Antidesma brachybotrys** Airy Shaw, **TFM2** 57; shrub; lowland and hill forest; Pk, Jh.

101.5.2 **Antidesma coriaceum** Tul., **FMP3** 233, **TFM2** 57; *Antidesma cordatum* Airy Shaw, **TFM2** 56; small tree to 15 m tall; lowland to lower montane forest at 1500 m; only missing from the far north.

101.5.3 **Antidesma cruciforme** Gage, **FMP3** 230, **TFM2** 55; small tree; montane forest at 1000–1400 m; Pk, Sl; endemic.

101.5.4 **Antidesma cuspidatum** Müll.Arg., **FMP3** 232, incl. var. *leiodiscus* Ridl., **TFM2** 58; small tree; lowland forest; common throughout.

101.5.5 **Antidesma ghaesembilla** Gaertn., **FMP3** 230, **TFM2** 56; small tree to 6 m tall; lowland to montane forest at 1200 m; Ml northward.

101.5.6 **Antidesma helferi** Hook.*f.*, **FMP3** 228, **TFM2** 58; tree to 18 m tall; swampy lowland forest; Kl, Pk.

101.5.7 **Antidesma hosei** Pax & K. Hoffm., **TFM2** 57; shrub; Kl, NS.

101.5.8 **Antidesma japonicum** Siebold & Zucc., **TFM2** 57; *Antidesma gracillimum* Gage, **FMP3** 227; small tree; lowlands and mountains, also on limestone; Ps, Tg, Pk, Ph.

101.5.9 **Antidesma laurifolium** Airy Shaw, **FMP3** 57; shrub; hill forest at 300–400 m; Gg Belumut, Jh.

101.5.10 **Antidesma leucocladon** Hook.*f.*, **FMP3** 233, **TFM2** 57; shrub to 5 m tall; lowland forest; Ps, Kd, Kl, Tg, Pk, Sl, Ml.

101.5.11 **Antidesma leucopodum** Miq., **TFM2** 56; *Antidesma hirtellum* Ridl., **FMP3** 229; small tree to 5 m tall; lowland and hill forest; Kd, Tg, Pk, Ph, Jh.

101.5.12 **Antidesma montanum** Blume, **FMP3** 231, **TFM2** 58; *Antidesma phanerophlebium* Merr., **FMP3** 230; small tree about 12 m tall; lowland and hill forest; throughout.

101.5.13 **Antidesma neurocarpum** Miq., **TFM2** 57; *Antidesma alatum* Hook.*f*., **FMP3** 227; small tree to 8 m tall; lowland and hill forest to 750 m; throughout.

101.5.14 **Antidesma orthogyne** (Hook.*f*.) Airy Shaw, **TFM2** 55; *Antidesma velutinosum* Blume var. *orthogyne* Hook.*f*., **FMP3** 231; shrub; lowland forest; Kd, Tg, Pk, Ph, Ml.

101.5.15 **Antidesma pachystachys** Hook.*f*., **FMP3** 226, **TFM2** 56; shrub to 4 m tall; lowland forest; Pn, Pk, Jh; endemic.

101.5.16 **Antidesma pahangense** Airy Shaw, **TFM2** 56; shrub; hill and montane forest; Pk, Ph, Jh; endemic.

101.5.17 **Antidesma pendulum** Hook.*f*., **FMP3** 227, **TFM2** 56; shrub to 2 m tall; hill and montane forest to 1200 m; Tg, Pk, Ph, Sl; endemic.

101.5.18 **Antidesma puncticulatum** Miq., P. Hoffmann *pers. comm.*; *Antidesma thwaitesianum* Müll.Arg., **TFM2** 57; shrub, twice collected, Bt Tanjung, Kd and Tasek Bera, Ph.

101.5.19 **Antidesma salicinum** Ridl., **FMP3** 228; incl. var. *latior* Ridl., **TFM2** 56; wiry shrub to 2 m or more tall; swiftly flowing mountain streams; widespread.

101.5.20 **Antidesma stipulare** Blume, **FMP3** 226, **TFM2** 56; *Antidesma kunstleri* Gage, **FMP3** 225; shrub or small tree to 5 m tall; lowland and hill forest; Tg, Ph, Jh.

101.5.21 **Antidesma tomentosum** Blume, **FMP3** 226, **TFM2** 55; *Antidesma longipes* Hook.*f*., **FMP3** 229; *Antidesma persimile* Kurz, **FMP3** 229; *Antidesma perakense* Pax & K. Hoffm., **FMP3** 233; shrub or small tree to 7 m tall; hill and montane forest to 1200 m; throughout except far north-west.

101.5.22 **Antidesma velutinosum** Blume, **FMP3** 231 incl. var. *lancifolium* Hook.*f*., **TFM2** 55; small tree to 5 m tall; lowland to lower montane forest at 1200 m; common throughout.

101.5.23 **Antidesma velutinum** Tul., **TFM2** 55; shrub; once from Kd.

101.6.1 **Aporusa arborea** (Blume) Müll.Arg., **FMP3** 239, **TFM2** 61; tree to 12 m tall; lowland and hill forest to 600 m; scattered throughout.

101.6.2 **Aporusa aurea** Hook.*f*., **FMP3** 240, **TFM2** 59; small tree to 15 m tall; lowland and hill forest; scattered throughout.

101.6.3 **Aporusa benthamiana** Hook.*f*., **FMP3** 236, **TFM2** 59; small tree to 12 m tall; lowland and hill forest to 600 m; Tg, Pk, Sl, NS, Jh, Sp.

101.6.4 **Aporusa bracteosa** Pax & K. Hoffm., **FMP3** 237, **TFM2** 60; tree to 20 m tall; lowland forest; Kl and Pk southward.

101.6.5 **Aporusa confusa** Gage, **FMP3** 238, **TFM2** 59; small tree to 18 m tall; lowland forest; scattered throughout.

101.6.6 **Aporusa falcifera** Hook.*f.*, **FMP3** 236, **TFM2** 60; tree to 24 m tall; lowland and hill forest to 540 m; scattered throughout.

101.6.7 **Aporusa frutescens** Blume, **FMP3** 241, **TFM2** 59; shrub or small tree; lowland forest; Kd, Pn, Kl, Ph, Jh, Sp.

101.6.8 **Aporusa globifera** Hook.*f.*, **FMP3** 237, **TFM2** 59; small tree to 12 m tall; lowland forest; Kd, Pn, Kl, Pk, Ph; endemic.

101.6.9 **Aporusa isabellina** Airy Shaw; **A03** 474, **TFM2** 61; small tree to 15 m tall; ridge tops in lowland forest; Kl, Tg, Ph, Sl; endemic.

101.6.10 **Aporusa lunata** (Miq.) Kurz, **FMP3** 237, **TFM2** 59; small tree; lowland to montane forest at 1500 m; Pn, Pk, Ph, Jh, Sp.

101.6.11 **Aporusa microstachya** (Tul.) Müll.Arg., **TFM2** 61; *Aporusa maingayi* Hook.*f.*, **FMP3** 241; tree; hillsides in lowland forest to 400 m; Kd and Tg southward.

101.6.12 **Aporusa miqueliana** Müll.Arg., **FMP3** 241, **TFM2** 61; tree to 12 m tall; lowland and hill forest to 700 m; scattered throughout.

101.6.13 **Aporusa nervosa** Hook.*f.*, **FMP3** 238, **TFM2** 61; tree exceptionally to 30 m tall; lowland and hill forest to 660 m; scatterred throughout; endemic.

101.6.14 **Aporusa nigricans** Hook.*f.*, **FMP3** 239, **TFM2** 61; tree to 14 m tall; lowland and hill forest to 600 m; scattered throughout.

101.6.15 **Aporusa nigropunctata** Pax & K. Hoffm. var. **antennifera** Airy Shaw, **TFM2** 61; small tree; usually in lowland forest, occasional at higher elevations; Sl and Ph northward.

101.6.16 **Aporusa nitida** Merr., **TFM2** 60; small tree to 9 m tall; disturbed lowland forest; twice from Pk.

101.6.17 **Aporusa octandra** (Buch.-Ham. *ex* D. Don) A.R. Vickery, **C01** 166; *Aporusa dioica* (Roxb.) Müll.Arg., **TFM2** 60; *Aporusa microcalyx* (Hassk.) Hassk., **FMP3** 238; small tree; damp lowland forest; throughout.

The Malayan plants are presumably var. *malesiana* Schot (**S09** 452).

101.6.18 **Aporusa penangensis** (Ridl.) Airy Shaw, **TFM2** 61; *Aporusa maingayi* Hook.*f.* var. *penangensis* Ridl., **FMP3** 242; tree to 45 m tall; lowland to lower montane forest at 1200 m; sparsely scattered through Malaya; endemic.

101.6.19 **Aporusa prainiana** King *ex* Gage, **FMP3** 240, **TFM2** 60; tree to 20 m tall; hillsides in lowland forest; Kd, Pn, Tg, Pk, Ph, Ml, Jh, Sp.

101.6.20 **Aporusa pseudoficifolia** Pax & K. Hoffm., **FMP3** 237, **TFM2** 59; shrub to 3 m tall; hill forest 450–900 m; Pn, Pk, NS.

101.6.21 **Aporusa selangorica** Pax & K. Hoffm., **TFM2** 59; small tree to 6 m tall; lowland and hill forest, often near rivers; Kd, Pk, Ph, Sl; endemic.

101.6.22 **Aporusa stellifera** Hook.*f.*, **FMP3** 239, **TFM2** 60; small tree to 15 m tall; lowland forest; Kl, Tg, Ph, Sl, Jh.

101.6.23 **Aporusa symplocoides** (Hook.*f.*) Gage, **FMP3** 240, **TFM2** 60; small tree to 12 m tall; lowland forest; common throughout.

101.6.24 **Aporusa sp. nov.**, **TFM2** 60; small tree; swampy lowland forest; twice collected in S.E. Jh; ?endemic.

101.7.1 **Ashtonia praeterita** Airy Shaw, **TFM2** 62; tree to 30 m tall; hill and montane forest, 450–1200 m; Ph, Sl, NS; endemic.

101.8.1a **Austrobuxus nitidus** Miq. var. **macrocarpus** Airy Shaw; **A03** 506, **TFM2** 63; once from near Bt Tangga, NS; endemic variety.

101.8.1b **Austrobuxus nitidus** Miq. var. **montanus** (Ridl.) Whitmore, **TFM2** 63; *Longetia montanus* Ridl., **FMP3** 224; *Austrobuxus montanus* (Ridl.) Airy Shaw; **A03** 507; shrub or small tree; high mountains; Ph.

101.8.1c **Austrobuxus nitidus** Miq. var. **nitidus**, **TFM2** 63; *Longetia malayana* (Benth.) Pax & K. Hoffm., **FMP3** 224; tree to 27 m tall; lowland forest, coastal forest, swamps, mountains; throughout.

101.9.1 **Baccaurea bracteata** Müll.Arg., **FMP3** 246, **TFM2** 67; tree to 15 m tall, sometimes stilt-rooted; swamp forest; Tg and Pk southward.

101.9.2 **Baccaurea brevipes** Hook.*f.*, **FMP3** 250, **TFM4** 66; small tree to 9 m tall; damp lowland forest; throughout.

101.9.3 **Baccaurea griffithii** Hook.*f.*, **FMP3** 248, **TFM2** 66; tree to 18 m tall; lowland forest; throughout; endemic.

101.9.4 **Baccaurea hookeri** Gage, **FMP3** 247, **TFM2** 67; tree to 18 m tall; lowland forest; Pk, Jh, Sp; endemic.

101.9.5 **Baccaurea javanica** (Blume) Müll.Arg., **TFM2** 65; *Baccaurea leucodermis* Hook.*f.* *ex* Ridl., **FMP3** 244; tree to 15 m tall; disturbed lowland forest; Kl, Pk, Ph, Jh.

101.9.6 **Baccaurea kunstleri** King *ex* Gage, **FMP3** 248, **TFM2** 65; buttressed tree to 21 m tall; lowland and hill forest to 750 m; Kl, Tg, Sl southward.

101.9.7 **Baccaurea lanceolata** (Miq.) Müll.Arg., **FMP3** 248, **TFM2** 65; small tree; lowland and hill forest, rarely on limestone; Ph and Sl southward.

101.9.8 **Baccaurea latifolia** King *ex* Hook.*f.*, **FMP3** 249, **TFM2** 67; tree to 18 m tall; lowland forest; Tg, Pk, Sp; endemic.

101.9.9 **Baccaurea macrophylla** (Müll.Arg.) Müll.Arg., **FMP3** 247, **TFM2** 66; tree to 12 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

101.9.10 **Baccaurea maingayi** Hook.*f.*, **FMP3** 246, **TFM2** 65; tree to 27 m tall; hill forest at 150–780 m; Pk, Tg, NS, Jh.

101.9.11 **Baccaurea minor** Hook.*f.*, **FMP3** 245, **TFM2** 66; small tree; lowland forest; Kl, Pk, Ph, NS, Jh, Sp.

101.9.12 **Baccaurea motleyana** (Müll.Arg.) Müll.Arg., **FMP3** 250, **TFM2** 66; *Baccaurea pubescens* Pax & K. Hoffm., **FMP3** 250; tree to 24 m tall; lowland and hill forest to 900 m; scattered throughout.

101.9.13 **Baccaurea parviflora** (Müll.Arg.) Müll.Arg., **FMP3** 243, **TFM2** 64; *Baccaurea scortechinii* Hook.*f.*, **FMP3** 244; small tree to 5 m tall; lowland and hill forest to 600 m; widespread, commoner in the north.

101.9.14 **Baccaurea polyneura** Hook.*f.*, **FMP3** 248, **TFM2** 67; tree to 24 m tall; lowland forest; Pk, Ml; endemic.

101.9.15 **Baccaurea pyriformis** Gage, **FMP3** 249, **TFM2** 67; tree to 15 m tall; lowland forest to 300 m; Pn, Ph, Sl, Ml, Jh, Sp; endemic.

101.9.16 **Baccaurea racemosa** (Reinw.) Müll.Arg., **TFM2** 65; *Baccaurea wallichii* Hook.*f.*, **FMP3** 245; tree to 15 m tall; lowland forest; throughout, commoner in the south.

101.9.17 **Baccaurea ramiflora** Lour., **TFM2** 65; *Baccaurea wrayi* King *ex* Hook.*f.*, **FMP3** 244; tree to 15 m tall; lowlands, rarely in the hills; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

101.9.18 **Baccaurea reniformis** Chakrab. & M.G. Gangop., **C02** 449; tree to 13 m tall; lowland forest, only known from type, Ulu Bubong, Pk; endemic.

101.9.19 **Baccaurea reticulata** Hook.*f.*, **FMP3** 246, **TFM2** 67; tree to 30 m tall; lowland forest to 300 m; Tg and Pk southward.

101.9.20 **Baccaurea sumatrana** Müll.Arg., **TFM2** 65; *Baccaurea kingii* Gage, **FMP3** 245; tree to 30 m tall; lowland forest; common throughout.

101.9.21 **Baccaurea velutina** (Ridl.) Ridl., **FMP5** 331, **TFM2** 67; *Baccaurea reticulata* Hook.*f.* var. *velutina* Ridl., **FMP3** 246; tree to 15 m tall; montane forest at 600–1350 m; Kd, Tg, Pk, Ph, Sl, NS.

101.10.1 **Baliospermum solanifolium** (Burm.) Suresh, **N11** 106; *Baliospermum axillare* Blume, **FMP3** 312; *Baliospermum montanum* (Willd.) Müll.Arg., **TFM2** 68; shrub to 90 cm tall; open ground in the lowlands; Ps, Pn, Pk, Ml.

101.11.1 **Bischofia javanica** Blume, **FMP1** 447; tree to 45 m tall; lowlands and mountains; Kl, Ph, Sl.

101.12.1 **Blachia andamanica** (Kurz) Hook.*f.*, **TFM2** 68; shrub; ?on limestone; Pk.

101.13.1 **Blumeodendron borneense** Pax & K. Hoffm., **TFM2** 70; *Blumeodendron concolor* Gage, **FMP3** 281; small tree; lowland forest; once each from P. Langkawi and P. Pangkor.

101.13.2 **Blumeodendron calophyllum** Airy Shaw, **TFM2** 70; tree to 18 m or more tall; hillsides in lowland forest to 300 m; Kd, Tg, Pk, Ph, Sl, Jh.

101.13.3 **Blumeodendron kurzii** (Hook.*f.*) J.J.Sm., **FMP3** 281, **TFM2** 70; tree to 15 m tall; lowland forest; Kd, Kl, Pk, Ph, Jh.

101.13.4 **Blumeodendron subrotundifolium** (Elmer) Merr., **TFM2** 70; tree to 36 m tall; lowland forest; scattered through Malaya.

101.13.5 **Blumeodendron tokbrai** (Blume) J.J.Sm., **TFM2** 71; *Blumeodendron vernicosum* (Hook.*f.*) Gage, **FMP3** 282; tree to 36 m, sometimes stilt-rooted; lowland forest to 450 m, often in swamps; Tg, Pk, Ph, Sl, Ns, Jh, Sp.

101.14.1 **Botryophora geniculata** (Miq.) Beumée *ex* Airy Shaw, **TFM2** 72; *Botryophora kingii* Hook.*f.*, **FMP3** 282; tree to 12 m tall; lowland to lower montane forest at 1500 m; Pn, Kl, Pk, Sl, Jh.

101.15.1 **Breynia coronata** Hook.*f.*, **FMP3** 218, **TFM2** 73; small tree to 5 m tall; lowland and mountains to 1200 m; widespread; endemic.

101.15.2 **Breynia discigera** Müll.Arg., **FMP3** 217, **TFM2** 73; small tree to 5 m tall; lowland and hill forest; widespread.

101.15.3 **Breynia microphylla** (Kurz *ex* Teijsm. & Binn.) Müll.Arg. var. **angustifolia** (Hook.*f.*) Airy Shaw, **A06** 272; *Breynia angustifolia* Hook.*f.*, **FMP3** 218, **TFM2** 73; shrub to 3 m tall; lowland forest; Ps, Pk, Ph, NS.

101.15.4 **Breynia reclinata** (Roxb.) Hook.*f.*, **FMP3** 219, **TFM2** 73; scandent shrub; lowlands and coasts; throughout.

101.15.5 **Breynia vitis-idaea** (Burm.*f.*) C.E.C. Fisch., **TFM2** 73; *Breynia rhamnoides* (Willd.) Müll.Arg., **FMP3** 218; *Breynia keithii* Ridl., **FMP3** 219; shrub; open sandy places and coasts; north of Malaya.

101.16.1 **Bridelia cinnamomea** Hook.*f.*, **FMP3** 185, **TFM2** 74; scrambling shrub or small tree; lowland forest, forest margins; Pk, Sl, Jh, Sp.

101.16.2 **Bridelia griffithii** Hook.*f.*, **FMP3** 185, **TFM2** 75; scrambling shrub; lowland forest; Pk, Ml, Jh, Sp; endemic.

101.16.3 **Bridelia ovata** Decne., **FMP3** 184, **TFM2** 74; small tree; dry open country; Ps, Kd, Pn.

101.16.4 **Bridelia penangiana** Hook.*f.*, **FMP3** 185, **TFM2** 75; tree to 18 m tall; lowland and hill forest; Kd, Pn, Tg, Ph, Sl.

101.16.5 **Bridelia pustulata** Blume, **FMP3** 185, **TFM2** 74; tree to 15 m tall; lowland forest; Pk, Ph, Sl, Ml, Jh, Sp; endemic.

101.16.6 **Bridelia stipularis** (L.) Blume, **FMP3** 183, **TFM2** 74; ?*Bridelia retusa auct. non* (L.) Spreng., **FMP3** 184; shrub or small tree; open country, often near streams; scatterred throughout.

101.16.7 **Bridelia tomentosa** Blume, **FMP3** 184, **TFM2** 74; tree to 18 m tall; secondary forest; common throughout.

101.16.8 **Bridelia whitmorei** Airy Shaw, **TFM2** 74; woody climber; lowland forest; Ulu Tembeling, Ph; endemic.

101.17.1 **Cephalomappa lepidotula** Airy Shaw, **TFM2** 76; small tree; lowland swamp forest; S.E. Jh.

101.17.2 **Cephalomappa malloticarpa** J.J. Sm., **TFM2** 76; tree to 36 m tall; lowland forest; Kl, Tg, Jh.

101.17.3 **Cephalomappa penangensis** Ridl., **FMP3** 279, **TFM2** 76; tree to 36 m tall; lowland forest including swamps; Pn, Tg, Pk, Pk, Jh; endemic.

101.18.1 **Chaetocarpus castanocarpus** (Roxb.) Thwaites, **FMP3** 310, **TFM2** 76; tree to 12 m tall; mainly coastal; Kd, Pn, Kl, Pk.

101.19.1 **Cheilosa montana** Blume, **V24** 163; *Baccaurea malayana auct. non* King *ex* Hook.*f.*, **FMP3** 247; *Baliospermum malayanum* Hook.*f.*, **FMP3** 313; *Cheilosa malayana* (Hook.*f.*) Corner *ex* Airy Shaw, **TFM2** 77; tree to 24 m tall; lowland forest; Kl, Tg, Pk, Sl, Sp.

101.20.1 **Chondrostylis kunstleri** (King *ex* Hook.*f.*) Airy Shaw, **TFM2** 77; *Kunstleriodendron sublanceolata* Ridl., **FMP3** 283; tree to 15 m tall; hill forest; Kd, Kl, Tg, Pk, Ph.

101.21.1 **Cladogynos orientalis** Zipp. *ex* Spanoghe, **FMP3** 276, **TFM2** 78; shrub to 150 cm tall; on limestone; Ps, P. Langkawi, Kl, Ph.

101.22.1 **Claoxylon indicum** (Reinw. *ex* Blume) Hassk., **FMP3** 271, **TFM2** 78; shrub to 4 m tall; lowland forest, often near the sea; widespread.

101.22.2 **Claoxylon kingii** Hook.*f.* *ex* Ridl., **FMP3** 272, **TFM2** 79; shrub; hill and montane forest at 300–1100 m; Kd, Pn, Pk.

101.22.3 **Claoxylon longifolium** (Blume) Endl. *ex* Hassk., **FMP3** 272 incl. var. *brachystachys* Hook.*f*., **TFM2** 79; tree to 9 m tall; lowland to montane forest at 1350 m; throughout.

101.22.4 **Claoxylon wallichianum** Müll.Arg., **FMP3** 272, **TFM2** 79; shrub to 4 m tall; lowland to montane forest at 1200 m; Pn, Pk, Jh; endemic.

101.23.1 **Cleidion spiciflorum** (Burm.*f*.) Merr., **TFM2** 79; *Cleidion javanicum* Blume, **FMP3** 296; shrub or small tree; lowland forest, sometimes on limestone; Pn, Kl, Pk, Sl.

101.24.1 **Cleistanthus bracteosus** Jabl., **FMP3** 187, **TFM2** 80; small tree; hillsides in lowland forest; Pk; endemic.

101.24.2 **Cleistanthus contractus** Airy Shaw, **A03** 511, **TFM2** 80; tree to 10 m tall; lowland forest; once from Lenggor F.R., Jh; endemic.

101.24.3 **Cleistanthus decurrens** Hook.*f*., **FMP3** 191, **TFM2** 81; shrub; lowlands, often near limestone; Pn, Tg, Pk, Ph, NS, Jh.

101.24.4 **Cleistanthus ellipticus** Hook.*f*., **FMP3** 194, **TFM2** 82; tree; rocky lowland forest; Tg, Pk; endemic.

101.24.5 **Cleistanthus flavescens** Jabl., **FMP3** 188, **TFM2** 81; small tree; Pk, Tg; endemic.

101.24.6 **Cleistanthus glaber** Airy Shaw, **TFM2** 80; lowland forest; Tg, Jh.

101.24.7 **Cleistanthus glandulosus** Jabl., **FMP3** 189, **TFM2** 81; small tree; hill forest; known only from type, Gg Keledang, Pk; endemic.

101.24.8 **Cleistanthus glaucus** Jabl., **FMP3** 188, **TFM2** 80; tree; on limestone and other rocky outcrops; Pk; endemic.

101.24.9 **Cleistanthus gracilis** Hook.*f*., **FMP3** 190 incl. var. *parvifolia* Ridl., **TFM2** 80; shrub; often but always on limestone ; Ps, P. Langkawi, Kd, Tg, Pk, Ph, Jh.

101.24.10 **Cleistanthus hirsutipetalus** Gage, **FMP3** 189 '*hirsutopetalus*', **TFM2** 81; tree; lowland forest; Pn, Tg, Ph, NS, Jh; endemic.

101.24.11 **Cleistanthus hirsutulus** Hook.*f*., **FMP3** 192, **TFM2** 81; *Cleistanthus siamensis* Craib, **FMP3** 190; tree; lowland forest, rarely on limestone; scattered throughout.

101.24.12 **Cleistanthus kingii** Jabl., **FMP3** 193, **TFM2** 83; tree; on limestone or in swampy lowland forest; Pk, Jh; endemic.

101.24.13 **Cleistanthus lanuginosus** Jabl., **FMP3** 192, **TFM2** 80; small tree; twice from Jh; endemic.

101.24.14 **Cleistanthus longinervis** Airy Shaw, **A04** 309; shrub or tree; lowland forest; twice from Tg; endemic.

101.24.15 **Cleistanthus macrophyllus** Hook.*f.*, **FMP3** 192, **TFM2** 81; tree; lowland forest, also on limestone; Kl, Pk, Ph, Sl, Jh, Sp; endemic.

101.24.16 **Cleistanthus maingayi** Hook.*f.*, **FMP3** 193, **TFM2** 82; ?tree; lowland forest; Sl, NS, Ml, Jh; endemic.

101.24.17 **Cleistanthus major** Airy Shaw, **A03** 510, **TFM2** 81; tree about 6 m tall; lowland forest; once from Bt Kajang, Tg; endemic.

101.24.18 **Cleistanthus malaccensis** Hook.*f.*, **FMP3** 189, **TFM2** 82; ?tree; lowland forest; Ph, Sl, Ml, Sp; endemic.

101.24.19 **Cleistanthus membranaceus** Hook.*f.*, **FMP3** 188, **TFM2** 80; tree; lowland forest; Pk; endemic.

101.24.20 **Cleistanthus myrianthus** (Hassk.) Kurz, **FMP3** 194, **TFM2** 82; *Cleistanthus pseudomyrianthus* Jabl., **FMP3** 194; small tree; lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.

101.24.21 **Cleistanthus nitidus** Hook.*f.*, **FMP3** 188 incl. var. *curtisii* (Jabl.) Ridl., **TFM2** 81; lowland and hill forest; Kd, Pn, Pk; endemic.

101.24.22 **Cleistanthus parvifolius** Hook.*f.*, **FMP3** 191, **TFM2** 82; small tree; limestone; once from Gopeng, Pk; endemic.

101.24.23 **Cleistanthus pedicellatus** Hook.*f.*, **FMP3** 187, **TFM2** 80; small tree; hill forest; Pn, Pk; endemic.

101.24.24 **Cleistanthus podocarpus** Hook.*f.*, **FMP3** 189, **TFM2** 81; tree to 20 m tall; lowland and hill forest; Tg, Pk, Jh; endemic.

101.24.25 **Cleistanthus polyphyllus** F.N. Williams, **FMP3** 193, **TFM2** 82; small tree; forest near the sea; Ps, Kd, Pn, Pk, Ph.

101.24.26 **Cleistanthus praetermissus** Gage, **FMP3** 193, **TFM2** 81; shrub; forest; once each from Pn, Pk and Jh.

101.24.27 **Cleistanthus pseudopodocarpus** Jabl., **TFM2** 83; ?tree; once from S.E. Jh.

101.24.28 **Cleistanthus rufus** (Hook.*f.*) Gehrm., **FMP3** 195, **TFM2** 82; shrub; lowland forest; ?Pn, Ph; endemic.

101.24.29 **Cleistanthus sumatranus** (Miq.) Müll.Arg., **FMP3** 192, **TFM2** 82; *Cleistanthus heterophyllus* Hook.*f.*, **FMP3** 190; small tree; lowland forest; Ph, Ml, Jh, Sp.

101.24.30 **Cleistanthus vestitus** Jabl., **TFM2** 83; *Cleistanthus perakensis* (Jabl.) Gage *ex* Ridl., **FMP3** 195; shrub to 2 m tall; lowland forest; Kd, Ph, Jh.

101.25.1 **Cnesmone javanica** Blume, **FMP3** 306, **TFM2** 83; stinging slender woody climber; open country, lowlands and hills; Ml and Ph northward.

101.25.2 **Cnesmone laevis** (Ridl.) Airy Shaw, **TFM2** 83; *Tragia laevis* Ridl., **FMP3** 307; stinging twining vine; on limestone; Ps, P. Langkawi.

101.25.3 **Cnesmone subpeltata** Ridl., **FMP3** 307, **TFM2** 83; slender twining climber; on limestone; Gg Pondok and Temengor, Pk; Batu Caves, Sl; endemic.

101.26.1 **Croton argyratus** Blume, **FMP3** 260, **TFM2** 85; tree to 18 m tall; lowland forest to 600 m; common throughout.

101.26.2 **Croton bonplandianus** Baill., **TFM2** 84; *Croton sparsiflorus* Morong, **C26** 661; herb; waste ground; Sp; naturalized from tropical America.

101.26.3 **Croton cascarilloides** Raeusch., **TFM2** 84; *Croton cumingii* Müll.Arg., **FMP3** 261; shrub or small tree; on limestone or other rocks near the sea; Ps, P. Langkawi, Kl, Pk, Ph, P. Tioman.

101.26.4 **Croton caudatus** Geisel., **TFM2** 85; *Croton caudatus* var. *malaccanus* Hook.*f*., **FMP3** 259; rheophytic shrub; Ulu Endau, Ph.

101.26.5 **Croton erythrostachys** Hook.*f*., **FMP3** 260, **TFM2** 85; *Croton calcicola* Ridl., **FMP3** 262; tree to 15 m tall; hill forest to 900 m, also limestone: Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.

101.26.6 **Croton heterocarpus** Müll.Arg., **FMP3** 262 '*heteropetalum*', **TFM2** 85; tree to 12 m tall; tidal creeks, inland edge of mangroves; Ph, Ml, Jh, Sp.

101.26.7 **Croton hirtus** L'Hér., **TFM2** 84, **C26** 661, **M47** 282; herb; waste ground; widespread; naturalized from tropical America.

101.26.8 **Croton kelantanicus** Airy Shaw, **A03** 515; tree; once from Sg Ketil, Kl; endemic.

101.26.9 **Croton laevifolius** Blume, **TFM2** 85; *Croton confusus* Gage, **FMP3** 261; *Croton griffithii* Hook.*f*., **FMP3** 261; tree to 12 m tall; lowland forest margins; common throughout.

101.26.10 **Croton lucidus** Gage, **FMP3** 262, **TFM2** 85; shrub or small tree; Gg Pulai, Jh; endemic.

101.26.11 **Croton macrocarpus** Ridl., **FMP5** 332, **TFM2** 85; small tree to 5 m tall; peat swamp forest; once from Telok Forest Reserve, Sl; endemic.

101.26.12 **Croton rheophyticus** Airy Shaw, **S48** 249; rheophytic shrub.; fast-flowing rivers; Sg Endau, Jh/Ph.

101.26.13 **Croton tiglium** L., **FMP3** 262; shrub or small tree; cultivated ground, around villages.

101.27.1 **Dicoelia beccariana** Benth., **TFM2** 86; small tree; lowland forest; once from Panching, Ph.

101.28.1 **Dimorphocalyx luzoniensis** Merr., **TFM2** 87; tree to 15 m tall; once from Gg Panti, Jh.

101.28.2 **Dimorphocalyx malayanus** Hook.*f.*, **FMP3** 266, **TFM2** 86; *Dimorphocalyx kunstleri* Hook.*f.*, **FMP3** 266; tree to 7 m tall; lowland and hill forest; Pn, Ml, Jh.

101.28.3a **Dimorphocalyx muricatus** (Hook.*f.*) Airy Shaw var. **minor** (Hook.*f.*) Airy Shaw, **TFM2** 87; *Ostodes muricatus* Hook.*f.* var. *minor* Hook.*f.*, **FMP3** 269; small tree; lowland and hill forest; Pn, NS, Ml.

101.28.3b **Dimorphocalyx muricatus** (Hook.*f.*) Airy Shaw var. **muricatus**, **TFM2** 87; *Ostodes muricatus* Hook.*f.*, **FMP3** 269; small tree to 7 m or more tall; lowland forest to 300 m; Pn, Pk, Ph, Sl, NS, Jh.

101.28.4 **Dimorphocalyx murinus** Elmer, **TFM2** 87; tree to 12 m tall; swampy lowland forest; S.E. Jh.

101.29.1 **Drypetes cockburnii** Airy Shaw, **A03** 502, **TFM2** 88, **A04** 298; tree to 20 m tall; lowland and hill forest; Ph, Jh; endemic.

101.29.2 **Drypetes curtisii** (Hook.*f.*) Pax & K. Hoffm., **FMP3** 223, **TFM2** 88; small tree; lowland and hill forest; Pn, Kl, Tg, Ph, Jh; endemic.

101.29.3 **Drypetes detersibilis** Airy Shaw, **TFM2** 88; tree; only known from type, Ph; endemic.

101.29.4 **Drypetes indica** (Müll.Arg.) Pax & K. Hoffm., **TFM2** 88; tree; montane forest at 1200 m; Maxwell's Hill, Pk, Fraser's Hill, Ph.

101.29.5 **Drypetes kikir** Airy Shaw, **TFM2** 89; tree to 30 m tall; lowland forest; Tg, Pk, Ph.

101.29.6 **Drypetes laevis** (Miq.) Pax & K. Hoffm., **TFM2** 89; tree, rarely to 40 m tall; lowland forest; Kd, Ph, NS, Jh.

101.29.7 **Drypetes longifolia** (Blume) Pax & K. Hoffm., **FMP3** 222, **TFM2** 89; tree to 20 m tall; lowland forest; widespread.

101.29.8 **Drypetes microphylla** (Merr.) Pax & K. Hoffm., **TFM2** 88; tree; lowland forest; P. Langkawi, Ph.

101.29.9 **Drypetes nervosa** (Hook.*f.*) Pax & K. Hoffm., **FMP3** 222, **TFM2** 88; tree; on limestone; Pk; endemic.

101.29.10 **Drypetes oxyodonta** Airy Shaw, **TFM2** 87; small tree to 10 m tall; lowland forest, also on limestone; Kl, Ph; endemic.

101.29.11 **Drypetes pachycarpa** Airy Shaw, **A04** 297; tree to 14 m tall; lowland forest; Kl, Tg, Pk; endemic.

101.29.12 **Drypetes pendula** Ridl., **FMP3** 222, **TFM2** 89; tree to 20 m tall; lowland forest; common throughout.

101.29.13 **Drypetes perakensis** Gage, **FMP3** 223, **TFM2** 89; small tree; Pk (poorly known); endemic.

101.29.14a **Drypetes rhakodiskos** (Hassk.) Airy Shaw var. **laevigata** Airy Shaw, **TFM2** 88; tree; NS, Ml.

101.29.14b **Drypetes rhakodiskos** (Hassk.) Airy Shaw var. **rhakodiskos**, **TFM2** 88; tree; Pn.

101.29.15 **Drypetes riparia** Ridl., **FMP3** 223, **TFM2** 88; small tree; on lowland river banks; Kl, Tg; endemic.

101.30.1 **Elateriospermum tapos** Blume, **FMP3** 252, **TFM2** 91; tree to 27 m tall; lowland and hill forest to 600 m; throughout.

101.31.1 **Endospermum diadenum** (Miq.) Airy Shaw, **A06** 293; *Endospermum malaccense* Müll.Arg., **FMP3** 305, **TFM2** 93; *Endospermum ovalifolium* Pax & K. Hoffm., **FMP3** 305; tree to 40 m tall; lowland to lower montane forest at 1000 m; common throughout.

101.32.1 **Epiprinus malayanus** Griff., **FMP3** 279, **TFM2** 95; tree to 15 m tall; lowland forest; Ml northwards.

101.33.1 **Erismanthus obliquus** Wall. *ex* Müll.Arg., **FMP3** 271, **TFM2** 95; shrub or small tree to 9 m tall; lowland forest, sometimes on limestone; Ps, Kd, Pn, Kl, Pk, Ph, Ml.

101.34.1 **Euphorbia antiquorum** L., **FMP3** 180, **TFM2** 96; cactus-like shrub; on limestone; Ps, P. Langkawi.

101.34.2 **Euphorbia atoto** G. Forst., **FMP3** 181, **TFM2** 96; succulent herb to 60 cm tall; sandy seashores; common an all coasts.

101.34.3 **Euphorbia heterophylla** L., **FMP3** 181; succulent herb to 1 m tall; seashores and waste ground; widespread; naturalized from tropical America.

101.34.4 **Euphorbia hirta** L., **FMP3** 181, **M47** 284; *Chamaesyce hirta* (L.) Millsp.; herb to 30 cm tall; common weed of waste ground; throughout; naturalized from tropical America.

101.34.5 **Euphorbia hypericifolia** L., **FMP5** 331, **M47** 286; *Chamaesyce hypericifolia* (L.) Millsp.; herb to 30 cm tall; roadsides; Kd, Ml; ?naturalized.

101.34.6 **Euphorbia synadenium** Ridl., **FMP3** 180, **TFM2** 96; shrub about 60 cm tall; rocky forest; Pn, Sl.

101.34.7 **Euphorbia thymifolia** L., **FMP3** 182; *Chamaesyce thymifolia* (L.) Millsp.; tufted prostrate herb; common on paths; widespread.

101.35.1 **Excoecaria agallocha** L., **FMP3** 314, **TFM2** 96; small tree; mangrove swamps and rocky shores; all coasts.

101.35.2 **Excoecaria cochinchinensis** Lour. var. **viridis** (Pax & K. Hoffm.) Merr., **TFM2** 97; *Excoecaria quadrangularis* Müll.Arg., **FMP3** 314; shrub; hill forest; Kd, Pn, Pk.

101.35.3 **Excoecaria oppositifolia** Griff., **TFM2** 96; shrub or small tree to 10 m tall; on limestone; P. Langkawi, Kl, Pk.

101.36.1 **Flueggea virosa** (Roxb. *ex* Willd.) Voigt, **W08** 287; *Flueggea microcarpa* Blume, **FMP3** 216; *Securinega virosa* (Roxb. *ex* Willd.) Baill., **TFM2** 131; straggling bush or small tree; open places, forming thickets; Ps, Kd, Pk, Ph, Sl.

101.37.1 **Glochidion arborescens** Blume, **FMP3** 211, **TFM2** 100; small tree; lowland forest; P. Langkawi, Ph, Sl, Ml, Sp.

101.37.2 **Glochidion borneense** (Müll.Arg.) Boerl.; **A04** 289; *Glochidion trilobum* Ridl., **FMP3** 210 in part; *Glochidion microbotrys* Hook.*f*., **FMP3** 209, **TFM2** 99; small tree, exceptionally reaching 15 m in height; lowland forest; Pn, Pk, Jh, Sp.

101.37.3 **Glochidion brunneum** Hook.*f*., **FMP3** 207, **TFM2** 100; *Glochidion goniocarpum* Hook.*f*., **FMP3** 211; *Glochidion maingayi* Gage, **FMP3** 210; *Glochidion pedunculatum* Ridl., **FMP3** 207; small tree to 6 m tall; lowland forest; Pk, Ph, Ml, Jh, Sp.

101.37.4 **Glochidion carrickii** Airy Shaw, **A03** 482, **TFM2** 100; tree to 8 m tall; hill forest; twice from Ulu Gombak F.R., Sl; endemic.

101.37.5 **Glochidion fuscum** (Müll.Arg.) Boerl., **TFM2** 100; small tree to 8 m tall; lowland forest; Pk, Jh, Sp.

101.37.6 **Glochidion glomerulatum** (Miq.) Boerl., **FMP3** 209, **TFM2** 100; *Glochidion nanogynum* (Müll.Arg.) Hook.*f*., **FMP3** 214; shrub or small tree to 9 m tall; lowland forest margins; Pn, Tg, Pk, Sl, Ml, Jh.

101.37.7 **Glochidion hypoleucum** (Miq.) Boerl., **TFM2** 101; *Glochidion laevigatum* (Müll.Arg.) Hook.*f*., **FMP3** 215; shrub or small tree to 6 m tall; lowland to lower montane forest at 1290 m; throughout.

101.37.8 **Glochidion insulare** Hook.*f*., **FMP3** 213, **TFM2** 101; tree; only known from type, Pn; endemic.

101.37.9 **Glochidion kunstlerianum** Gage, **FMP3** 210, **TFM2** 102; shrub; lowland forest; Pk, Sl, Jh, Sp.

101.37.10 **Glochidion littorale** Blume, **FMP3** 207, **TFM2** 101; shrub; coasts; Pk, Ph, Jh.

101.37.11 **Glochidion lucidum** Blume, **TFM2** 99; tree to 30 m tall; lowland to lower montane forest; Tg, Ph.

101.37.12 **Glochidion macrostigma** Hook.*f.*, **FMP3** 214, **TFM2** 100, **A04** 289; small tree; hill forest; Kd, Pn, Pk.

101.37.13 **Glochidion obscurum** (Roxb. *ex* Willd.) Blume, **FMP3** 208, **TFM2** 99; small tree to 15 m tall; mainly lowland secondary forest; common throughout.

101.37.14 **Glochidion penangense** (Müll.Arg.) Airy Shaw, **TFM2** 101; *Glochidion villicaule* Hook.*f.*, **FMP3** 211; *Glochidion coronatum* Hook.*f.*, **FMP3** 212; shrub or small tree; lowland and hill forest to 900 m; Ph.

101.37.15 **Glochidion perakense** (Müll.Arg.) Airy Shaw, **FMP3** 213, **TFM2** 101; *Glochidion glaberrimum* Ridl., **FMP3** 208; shrub or small tree to 6 m tall; mainly coastal swampy places; widespread.

101.37.16 **Glochidion rubrum** Blume, **TFM2** 101; *Glochidion leiostylum* Kurz, **FMP3** 212; *Glochidion laevigatum* (Müll.Arg.) Hook.*f.* var. *cuspidatum* Ridl., **FMP3** 215; shrub or small tree to 6 m tall; lowland forest; widespread.

101.37.17 **Glochidion sericeum** Hook.*f.*, **FMP3** 215, **FMP3** 101; shrub or small tree to 6 m tall; lowland to lower montane forest at 1290 m; Tg and Pk southward.

101.37.18 **Glochidion singaporense** Gage, **FMP3** 209, **TFM2** 101; shrub to 3 m tall; lowland forest fringes; Sl, NS, Ml, Jh, Sp.

101.37.19 **Glochidion stylosum** Ridl., **FMP3** 215, **TFM2** 100; small tree; lower montane forest; only known from type; Semangkok Pass, Sl; endemic.

101.37.20 **Glochidion superbum** Baill., **FMP3** 208, **TFM2** 99; tree to 18 m tall; lowland forest; common throughout.

101.37.21 **Glochidion symingtonii** Airy Shaw, **TFM2** 100; treelet; hill forest; Keledang Saiong and Gg Peninjau, Pk; endemic.

101.37.22 **Glochidion tetrapteron** Gage, **FMP3** 211, **TFM2** 100; shrub or small tree; fringes of lowland and montane forest; Ph; endemic.

101.37.23 **Glochidion wallichianum** Müll.Arg., **FMP3** 213, **TFM2** 99; *Glochidion trilobum* Ridl., **FMP3** 210 in part; *Glochidion desmocarpum* Hook.*f.*, **FMP3** 214; small tree, rarely to 27 m tall; lowland forest; Sl and Ph northward.

101.37.24 **Glochidion xestophyllum** Airy Shaw, **TFM2** 99; 15 m tall tree; once from Banang Forest Reserve, Jh.

101.38.1 **Hevea brasiliensis** (Willd. *ex* A. Juss.) Müll.Arg., **K09** 110; the rubber tree; ubiquitously planted, often escaping and persisting; throughout; naturalized from South America.

101.39.1 **Homalanthus populneus** (Geisel.) Pax, **TFM2** 102; *Homalanthus populifolius* Grah., **FMP3** 313; small tree to 9 m tall; lowlands and mountains, recorded from limestone; Sl northward.

101.40.1 **Homonoia riparia** Lour., **FMP3** 309, **TFM2** 103, **V20** 241; rheophytic shrub.; beds of swiftly flowing rocky rivers; Ph northward.

101.41.1 **Hymenocardia punctata** Wall. *ex* Lindl., **FMP3** 251, **TFM2** 103; scrambling shrub or small tree to 9 m tall; hill forests; Ph.

101.42.1 **Koilodepas ferrugineum** Hook.*f.*, **FMP3** 276 '*Coelodepas*', **TFM2** 104; small tree; only known from type, Ml; endemic.

101.42.2 **Koilodepas longifolium** Hook.*f.*, **FMP3** 275 '*Coelodepas*', **TFM2** 104; *Coelodepas glanduligerum* Pax & K. Hoffm., **FMP3** 275; small tree; lowland forest; P. Langkawi, Tg, Pk, Ml, Jh, Sp.

101.42.3 **Koilodepas wallichianum** Benth., **FMP3** 275 '*Coelodepas*', **TFM2** 104; small tree; hill forest; Pn; endemic.

101.43.1 **Lasiococca malaccensis** Airy Shaw, **TFM2** 104; small tree to 7 m tall; lowland forest; once from Batang Melaka F.R., Ml; endemic.

101.44.1 **Leptopus australis** (Zoll. & Moritzi) Pojark., **TFM2** 105; *Andrachne australis* Zoll. & Moritzi, **FMP3** 197; *Andrachne calcarea* Ridl., **FMP3** 198; *Andrachne hirta* Ridl., **FMP3** 197; subshrub to 50 cm tall; on limestone; Ps, P. Langkawi, Kd, Kl, Pk, Sl.

101.45.1 **Macaranga amissa** Airy Shaw, **TFM2** 112; *Endospermum perakense* King, **FMP3** 306; tree to 30 m tall; swampy lowland forest; Tg, Pk, Ml, Jh; endemic.

101.45.2 **Macaranga andamanica** Kurz, **TFM2** 112; *Macaranga brandisii* King *ex* Hook.*f.*, **FMP5** 333; tree to 13 m tall; hill and montane forest; Kd, Pn, Ph.

101.45.3 **Macaranga baccaureifolia** Airy Shaw, **TFM2** 112; tree to 15 m tall; lowland swamp forest; Jh.

101.45.4 **Macaranga caladiifolia** Becc., **TFM2** 111; small tree; peat swamp forest; Ph.

101.45.5 **Macaranga conifera** (Zoll.) Müll.Arg., **TFM2** 112; *Macaranga populifolia* Müll.Arg., **FMP3** 304; tree to 24 m tall; secondary forest; scattered throughout.

101.45.6 **Macaranga constricta** Whitmore & Airy Shaw, **TFM2** 107; tree to 18 m tall; lowland and hill forest; Tg, Ph; endemic.

101.45.7a **Macaranga curtisii** Hook.*f.* var. **curtisii**, **FMP3** 301, **TFM2** 107; tree to 15 m tall; hill and lower montane forest 660–1200 m; widespread.

101.45.7b **Macaranga curtisii** Hook.*f.* var. **glabra** Whitmore, **TFM2** 111; small tree; montane forest at 660–1200 m; Tg, Pk, Ph, Sl; endemic variety.

101.45.8 **Macaranga denticulata** (Blume) Müll.Arg., **FMP3** 303, **TFM2** 111; tree to 9 m tall; secondary forest; widespread, commoner in the north.

101.45.9 **Macaranga diepenhorstii** Müll.Arg., **TFM2** 111; tree to 24 m tall; along rivers in primary forest; Kl, Tg, Pk, Ph, Sl, Ml.

101.45.10 **Macaranga gigantea** (Rchb.f. & Zoll.) Müll.Arg., **TFM2** 107; *Macaranga megalophylla* (Müll.Arg.) Müll.Arg., **FMP3** 298; *Macaranga incisa* Gage, **FMP3** 301; tree to 15 m tall; disturbed lowland forest; throughout.

101.45.11 **Macaranga heynei** I.M. Johnst., **TFM2** 112; *Macaranga robiginosa* Ridl., **FMP3** 303; small tree; secondary forest; Ps, Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

101.45.12 **Macaranga hosei** King *ex* Hook.*f.*, **FMP3** 298, **TFM2** 111; tree to 24 m tall; lowland forest; common throughout.

101.45.13 **Macaranga hullettii** King *ex* Hook.*f.*, **FMP3** 301, **TFM2** 107; tree to 9 m tall; lowland forest to 600 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

101.45.14 **Macaranga hypoleuca** (Rchb.*f.* & Zoll.) Müll.Arg., **FMP3** 300, **TFM2** 106; tree to 30 m tall; secondary forest; throughout.

101.45.15 **Macaranga indica** Wight, **TFM2** 107; tree to 21 m tall; montane forest above 1000 m; Main Range.

101.45.16 **Macaranga kingii** Hook.*f.*, **FMP3** 300, **TFM2** 106; slender treelet to 5 m tall; lowland forest; Jh.

101.45.17 **Macaranga laciniata** Whitmore & Airy Shaw, **TFM2** 112; small tree; secondary forest; Kl, Tg, Ph.

101.45.18 **Macaranga lowii** King *ex* Hook.*f.*, **FMP3** 304, **TFM2** 112; *Mallotus auriculatus* Merr., **FMP5** 333; small tree; primary lowland forest; throughout, commoner in the north.

101.45.19 **Macaranga motleyana** (Müll.Arg.) Müll.Arg. ssp. **griffithiana** (Müll.Arg.) Whitmore, **W13** 448; *Macaranga griffithiana* Müll.Arg., **FMP3** 299, **TFM2** 107; small bushy tree; swampy lowland forest; common throughout.

101.45.20 **Macaranga pruinosa** (Miq.) Müll.Arg., **TFM2** 106; *Macaranga maingayi* Hook.*f.*, **FMP3** 298; tree to 15 m tall; lowland swamp forest; throughout.

101.45.21 **Macaranga puncticulata** Gage, **FMP3** 302, **TFM2** 111; tree to 15 m tall; swampy lowland forest; Pk, Sl, Ml, Jh, Sp.

101.45.22 **Macaranga quadricornis** Ridl., **FMP3** 300, **TFM2** 107; tree to 12 m tall; montane forest above 630 m and lowland swamp forest; Sl, Jh.

101.45.23 **Macaranga recurvata** Gage, **FMP3** 301, **TFM2** 111; tree to 30 m tall; swampy lowland forest; Kl, Tg, Ph, Sl, NS, Ml, Jh, Sp.

101.45.24 **Macaranga setosa** Gage, **FMP3** 304, **TFM2** 112; small tree to 9 m tall; lowland forest; Ph, Jh.

101.45.25 **Macaranga tanarius** (L.) Müll.Arg., **FMP3** 302, **TFM2** 111; tree to 9 m tall; secondary forest; common throughout.

101.45.26 **Macaranga trichocarpa** (Rchb.*f.* & Zoll.) Müll.Arg., **FMP3** 303, **TFM2** 112; scandent shrub or tree to 5 m tall; lowland forest; Kd, Pk, Ph, Sl, Jh, Sp.

101.45.27 **Macaranga triloba** (Blume) Müll.Arg., **FMP3** 298, **TFM2** 107; small tree; lowland forest including secondary growth; common throughout.

101.46.1 **Mallotus barbatus** Müll.Arg., **FMP3** 289, **TFM2** 113; small tree; secondary forest, also on limestone; Kd, Kl, Tg, Pk.

101.46.2 **Mallotus bracteatus** Hook.*f.*, **FMP3** 286, **TFM2** 115; shrub or small tree to 5 m; limestone; Ps, Pk; endemic (but dubiously distinct from **M. dispar** (Blume) Müll.Arg.).

101.46.3 **Mallotus brevipetiolatus** Gage, **FMP3** 287, **TFM2** 114; shrub; on limestone hills; Ps, Kd, Pk.

101.46.4 **Mallotus cuneatus** Ridl., **FMP3** 288, **TFM2** 115; shrub to 3 m tall; on limestone; Ps.

101.46.5 **Mallotus dispar** (Blume) Müll.Arg., **FMP3** 286, **TFM2** 115; *Mallotus leucocalyx* Müll.Arg., **FMP3** 286; small tree; usually on limestone; scatterred in the north.

101.46.6 **Mallotus eriocarpus** (Thwaites) Müll.Arg., **TFM2** 115; *Coelodiscus montanus* Müll.Arg., **FMP3** 280; small tree; lowlands, occasionally on limestone; Pn, Ph, Ml, Jh.

101.46.7 **Mallotus floribundus** (Blume) Müll.Arg., **FMP3** 290, **TFM2** 113; small tree; common on river banks; Ph northward, also Jh.

101.46.8 **Mallotus griffithianus** Hook.*f.*, **FMP3** 291, **TFM2** 116; tree to 12 m tall; lowland forest; throughout; endemic.

101.46.9 **Mallotus kingii** Hook.*f.*, **FMP3** 293, **TFM2** 115; tree to 15 m tall; lowland forest; NS, Pk and Ph northward.

101.46.10 **Mallotus korthalsii** Müll.Arg., **TFM2** 115; small tree; lowland forest; Kd, Ph, Jh.

101.46.11 **Mallotus lackeyi** Elmer, **TFM2** 114; small tree; hill forest; Kl, Ph.

101.46.12 **Mallotus leucodermis** Hook.*f*., **FMP3** 291, **TFM2** 116; *Coccoceras muticum* Müll.Arg. var. *pedicellatum* Hook.*f*., **FMP3** 294; tree to 24 m tall; lowland forest; Kl, Ph, Sl.

101.46.13 **Mallotus macrostachyus** (Miq.) Müll.Arg., **FMP3** 288, **TFM2** 114; tree to 18 m tall; lowland to lower montane forest at 1200 m; throughout.

101.46.14 **Mallotus miquelianus** (Scheff.) Boerl., **TFM2** 114; *Mallotus anisophyllus* Hook.*f*., **FMP3** 293; small tree; lowland forest; Ml and Ph northward.

101.46.15 **Mallotus moritzianus** Müll.Arg., **TFM2** 115; tree; Tg, Jh.

101.46.16 **Mallotus muticus** (Müll.Arg.) Airy Shaw, **TFM2** 117; *Coccoceras muticum* Müll.Arg., **FMP3** 294; tree to 24 m tall; swampy lowland forest; Kd, Ph, Sl.

101.46.17 **Mallotus oblongifolius** (Miq.) Müll.Arg., **FMP3** 293, **TFM2** 116; *Mallotus puberulus* Hook.*f*., **FMP3** 290; *Mallotus porterianus* Müll.Arg., **FMP3** 292; tree to 9 m tall; lowland forest; common throughout.

101.46.18 **Mallotus paniculatus** (Lam.) Müll.Arg., **TFM2** 114; *Mallotus cochinchinensis* Lour.; tree to 12 m tall; secondary forest in the lowlands and hills to 900 m; throughout.

101.46.19 **Mallotus peltatus** (Geisel.) Müll.Arg., **TFM2** 113; *Mallotus acuminatus* (Blume) Müll.Arg., **FMP3** 290; tree to 6 m tall; lowland forest; Pk, Ph, Sl.

101.46.20 **Mallotus penangensis** Müll.Arg., **FMP3** 293, **TFM2** 116; tree to 15 m tall; lowland to lower montane forest at 1100 m; throughout; endemic.

101.46.21 **Mallotus philippensis** (Lam.) Müll.Arg., **FMP3** 291 '*philippinensis*', **TFM2** 115; tree to 9 m tall; lowland forest margins, sometimes on limestone; Kd, Tg, Pk, Ph, NS.

101.46.22 **Mallotus repandus** (Willd.) Müll.Arg., **FMP3** 292, **TFM2** 114; scandent shrub; lowland and hill forest, recorded on limestone; Ps, Kl, Pk, Sl, NS.

101.46.23 **Mallotus smilaciformis** Gage, **FMP3** 288, **TFM2** 115; shrub; only known from type, Pk; endemic.

101.46.24 **Mallotus subcuneatus** (Gage) Airy Shaw, **TFM2** 115; *Ceolodiscus subcuneatus* Gage, **FMP3** 280; small tree; lowlands; scattered throughout.

101.46.25 **Mallotus subpeltatus** (Blume) Müll.Arg., **FMP3** 290, **TFM2** 116; tree to 12 m tall; lowland and hill forest to 540 m; scattered throughout.

101.46.26 **Mallotus tiliifolius** (Blume) Müll.Arg., **FMP3** 285, **TFM2** 114; small tree to 9 m tall; primary and secondary forest; widespread.

101.46.27 **Mallotus wrayi** King *ex* Hook.*f.*, **FMP3** 287, **TFM2** 115; *Mallotus lanceifolius* Hook.*f.*, **FMP3** 287; *Kunstlerodendron cuspidatum* Ridl., **FMP3** 283; tree to 24 m tall; lowland forest; Pn, Pk, Jh.

101.46.28 **Mallotus sp.**, **TFM2** 114; shrub; lowland forest; once near Kuala Lompat, Ph; endemic.

101.47.1 **Manihot esculenta** Crantz, **K09** 112; cassava; common relic of cultivation; wasteground throughout; naturalized from tropical America.

101.47.2 **Manihot glaziovii** Müll.Arg., **C26** 662, **K09** 112; small tree; ornamental, frequently escaping; waste ground; naturalized from tropical America.

101.48.1 **Margaritaria indica** (Dalzell) Airy Shaw, **TFM2** 117, **W07** 425; small tree; once at P. Berhala, Ph.

101.49.1 **Megistostigma burmanicum** (Kurz) Airy Shaw, **TFM2** 84; climber; Ps, Kl, Sl.

101.49.2 **Megistostigma malaccense** Hook.*f.*, **TFM2** 83; *Sphaerostylis malaccense* (Hook.*f.*) Pax & K. Hoffm., **FMP3** 308; woody climber; lowland forest; Ph and NS southwards.

101.50.1 **Melanolepis multiglandulosa** (Reinw. *ex* Blume) Rchb.*f.* & Zoll., **FMP3** 284, **TFM2** 118; tree to 12 m tall; open country; central and north Malaya.

101.51.1 **Micrococca johorica** Airy Shaw, **A03** 525, **TFM2** 118; treelet to 5 m tall; lowland forest; Kluang and Sg Sedili, Jh; endemic.

101.51.2 **Micrococca malaccensis** Airy Shaw, **A03** 524, **TFM2** 118; shrub or small tree; lowland forest; Ml, Jh; endemic.

101.51.3 **Micrococca mercurialis** (L.) Benth., **FMP3** 273, **TFM2** 118; annual herb to 30 cm tall; open sandy places near the coast; Pn, Tg, Pk, Sp.

101.52.1 **Neoscortechinia kingii** (Hook.*f.*) Pax & K. Hoffm., **TFM2** 120, **V23** 310; *Scortechinia kingii* Hook.*f.*, **FMP3** 251; tree to 18 m or more tall; lowland forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

101.52.2 **Neoscortechinia nicobarica** (Hook.*f.*) Pax & K. Hoffm., **TFM2** 120, **V23** 314; *Scortechinia paniculata* Ridl., **FMP5** 332; tree to 27 m tall; lowland, or more frequently hill forest; Kd, Kl, Ph, Sl, Jh.

101.52.3 **Neoscortechinia philippinensis** (Merr.) Welzen, **V23** 316; *Neoscortechinia forbesii auct. non* Hook.*f. ex* S. Moore, **TFM2** 120; small tree; lowland and hill forest to 700 m, often in swamps; Kd, Tg, Sl, Jh.

101.52.4 **Neoscortechinia sumatrensis** S. Moore, **TFM2** 119, **V23** 318; tree to 15 m tall; swampy lowland forest; NS, Jh, Sp.

101.53.1 **Omphalea bracteata** (Blanco) Merr., **TFM2** 121; woody climber; once from near Gg Panti, Jh.

101.53.2 **Omphalea malayana** Merr., **TFM2** 121, **M38** 48; *Trigonostemon arboreus* Ridl., **TFM2** 136; small tree to 6 m tall; twice from P. Tioman, Ph.

101.54.1 **Paracroton pendulus** (Hassk.) Miq., **B08** 719; *Ostodes macrophyllus* (Müll.Arg.) Benth., **FMP3** 269; *Fahrenheitia pendula* (Hassk.) Airy Shaw, **TFM2** 97; small tree to 9 m tall, sometimes bigger; damp or swampy lowland forest; Kd, Pn, Tg, Pk, Ph, NS, Ml, Jh, Sp.

101.55.1 **Phyllanthus albidiscus** (Ridl.) Airy Shaw, **TFM2** 123; *Cleistanthus albidiscus* Ridl., **FMP3** 191; small tree; Gg Jerai, Kd.

101.55.2 **Phyllanthus amarus** Schumach. & Thonn., **TFM2** 122, **B37** 469; *Phyllanthus niruri auct. non* L., **FMP3** 199; slender herb to 60 cm tall; weed of dry ground; widespread; naturalized from tropical America.

101.55.3 **Phyllanthus chamaepeuce** Ridl., **FMP3** 200, **TFM2** 122; small shrub to 7.5 cm tall; among rocks near fast-flowing rivers; Kl, Tg.

101.55.4 **Phyllanthus columnaris** Müll.Arg., **TFM2** 123; small tree to 7 m tall; on limestone; Ps, P. Langkawi.

101.55.5 **Phyllanthus debilis** Klein *ex* Willd., **T18** 87, **M47** 290; herb; waste ground; Sp; naturalized from southern India.

101.55.6 **Phyllanthus elegans** Wall. *ex* Müll.Arg., **FMP3** 203, **TFM2** 122; small shrub; stream banks; Kd.

101.55.7 **Phyllanthus emblica** L., **TFM2** 123; *Emblica pectinata* (Hook.*f.*) Ridl., **FMP3** 217; tree to 36 m tall; lowland and hill forest; scattered throughout.

101.55.8 **Phyllanthus filicifolius** Gage, **FMP3** 201, **TFM2** 121; shrub; lowland including limestone; P. Langkawi; endemic.

101.55.9 **Phyllanthus gomphocarpus** Hook.*f.*, **FMP3** 204, **TFM2** 122; shrub to 3 m tall; lowlands to mountain tops at 2100 m; widespread.

101.55.10 **Phyllanthus gracilipes** (Miq.) Müll.Arg., **FMP3** 214, **TFM2** 122; *Phyllanthus hullettii* Ridl., **FMP3** 204; shrub; lowland and montane forest; P. Langkawi, Ml.

101.55.11 **Phyllanthus oxyphyllus** Miq., **TFM2** 123; *Phyllanthus frondosus* Wall. *ex* Müll.Arg., **FMP3** 202; shrub or small tree; lowlands to mountains, rarely on limestone; common throughout.

101.55.12 **Phyllanthus pachyphyllus** Müll.Arg., **TFM2** 123; *Phyllanthus campanulatus* Ridl., **FMP3** 203; *Phyllanthus coriaceus* Wall. *ex* Hook.*f.*, **FMP3** 203; shrub or small tree; hill and montane forest; scattered widely.

101.55.13 **Phyllanthus pulcher** Wall. *ex* Müll.Arg., **FMP3** 201, **TFM2** 121; shrub to 60 cm tall; open ground, often near rivers, also cultivated; widespread.

101.55.14 **Phyllanthus reticulatus** Poir., **FMP3** 202, **TFM2** 123; *Phyllanthus dalbergioides* Wall. *ex* J.J.Sm., **FMP3** 201; *Phyllanthus erythrocarpus* Ridl., **FMP3** 202; shrub or small tree; open country, forest margins; Kd, Tg, Ph, Sl, Ml, Jh.

101.55.15 **Phyllanthus ridleyanus** Airy Shaw, **TFM2** 123; *Phyllanthodendron coriaceum* Gage, **FMP3** 205; *Phyllanthodendron dubium* (Ridl.) Gage, **FMP3** 205 in part; scandent shrub; on limestone; Kl, Pk.

101.55.16 **Phyllanthus roseus** (Craib & Hutch.) Beille, **TFM2** 123; *Phyllanthodendron dubium* (Ridl.) Gage, **FMP3** 205 in part; shrub; lowlands and hills to 750 m; P. Langkawi, Kd, Pn, Tg, Pk.

101.55.17 **Phyllanthus sikkimensis** Müll.Arg., **TFM2** 122; *Phyllanthus hamiltonianus* Müll.Arg., **FMP3** 204; shrub; open country; Ps.

101.55.18 **Phyllanthus urinaria** L., **FMP3** 200, **TFM2** 122, **M47** 292; herb to 60 cm tall; weed of cultivation, waste ground; throughout.

R30 have split this species into four, with two subspecies of P. *urinaria* recognized. These authors indicate that *Phyllanthus urinaria* L. ssp. *urinaria*, *Phyllanthus nozeranii* Rossignol & Haicour and *Phyllanthus hookeri* Müll.Arg. are to be found in Malaya

101.55.19 **Phyllanthus virgatus** G. Forst., **TFM2** 121, **M47** 294; *Phyllanthus simplex* Retz., **FMP3** 200; small shrub; open ground; widespread.

101.55.20 **Phyllanthus watsonii** Airy Shaw, **A03** 493, **TFM2** 122; shrub to 15 cm tall; near fast-flowing rivers; Ulu Sg. Endau, Jh; endemic.

101.56.1 **Pimelodendron griffithianum** (Müll.Arg.) Benth., **FMP3** 313 '*Pimeleodendron*', **TFM2** 125; tree often to 21 m tall, sometimes reaching 39 m; lowland forest; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

101.56.2 **Pimelodendron macrocarpum** J.J.Sm.; **A03** 551, **TFM2** 126; tree to 18 m tall; swampy lowland forest; Sl, Ml, Jh.

101.57.1 **Pterococcus corniculatus** (Sm.) Pax & K. Hoffm., **TFM2** 84; *Pterococcus glaberrimus* Hassk., **FMP3** 309; slightly woody twiner; open ground, sometimes cultivated; Ph, Ml, Jh, Sp.

101.58.1 **Ptychopyxis caput-medusae** (Hook.*f.*) Ridl., **FMP3** 295, **TFM2** 127; tree to 27 m tall; lowland and hill forest to 480 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Sp; endemic.

101.58.2a **Ptychopyxis costata** Miq. var. **costata**, **TFM2** 127; tree to 4 m tall; lowland forest; once from Sg Krian, Pk.

101.58.2b **Ptychopyxis costata** Miq. var. **oblanceolata** Airy Shaw, **TFM2** 127; *Ptychopyxis costata* Miq., **FMP3** 295; tree to 4 m tall; lowland and hill forest; Pk, Ph, Sl, NS, Ml, Sp; endemic variety.

101.58.3 **Ptychopyxis javanica** (J.J.Sm.) Croizat, **TFM2** 127; *Ptychopyxis angustifolia* Gage *ex* Ridl., **FMP3** 296; tree 9–12 m tall; lowland forest; Kd, Pn, Pk.

101.58.4 **Ptychopyxis kingii** Ridl., **FMP3** 296, **TFM2** 127; tree to 11 m tall; lowland and hill forest to 750 m; Pk, Ph, Jh.

101.58.5 **Ptychopyxis triradiata** Airy Shaw, **TFM2** 127; tree to 15 m tall; known only from type, Bota Kiri F. R., Pk; endemic.

101.59.1 **Richeriella malayana** M.R. Hend., **H35** 122, **TFM2** 128; shrub or small tree 3–12 m tall; lowlands, also on limestone; Pn, Tg, Pk, P. Tioman, Ml.

101.60.1 **Ricinus communis** L., **FMP3** 309; shrub to 2 m tall; waste ground; naturalized from Africa.

101.61.1 **Sapium baccatum** Roxb., **FMP3** 315, **TFM2** 129; tree to 36 m tall; lowland and hill forest to 600 m; throughout.

101.61.2 **Sapium discolor** (Champ. *ex* Benth.) Müll.Arg., **FMP3** 316, **TFM2** 129; tree to 24 m tall; lowland and hill forest to 800 m; Pk, Ph, Sl, NS, Jh.

101.61.3 **Sapium indicum** Willd., **FMP3** 317, **TFM2** 129; tree to 18 m tall, usually smaller; lowland forest margins; widespread.

101.61.4 **Sapium insigne** (Royle) Benth & Hook.*f. ex* Pax & K. Hoffm., **TFM2** 129; tree to 9 m tall; on limestone; once from Batu Caves, Sl.

In his recent revision of *Sapium*, Kruijt [**K71**] restricts the genus to tropical America and refers to the Malayan species as *Excoecaria baccata* (Roxb.) Müll.Arg., *Excoecaria discolor* (Champ. *ex* Benth.) Müll.Arg., *Shirakia indica* (Willd.) Hurus. and ?*Falconeria insignis* Royle.

101.62.1 **Sauropus androgynus** (L.) Merr., **TFM2** 131; *Sauropus albicans* Blume, **FMP3** 220; *Sauropus sumatranus* Miq., **FMP3** 220; shrub or small tree; lowlands, often cultivated; widespread.

101.62.2 **Sauropus bacciformis** (L.) Airy Shaw, **A05** 685; *Agyneia bacciformis* L., **FMP3** 198; *Synostemon bacciformis* (L.) G.L. Webster, **TFM2** 133; bushy herb; saline soils, usually near the sea; Tg, Ph, Jh, Sp.

101.62.3 **Sauropus brevipes** Müll.Arg., **TFM2** 130; *Sauropus parvifolius* Ridl., **FMP3** 221; shrub; lowlands, sometimes on limestone; Ps, P.Langkawi, Kd, Ph.

101.62.4 **Sauropus calcareus** M.R. Hend., **H35** 121, **TFM2** 130; small shrub; on limestone; once from Gg Senyum, Ph; endemic.

101.62.5 **Sauropus elegantissimus** Ridl., **TFM2** 130; treelet to 5 m tall; hill forest at 450 m; only known from type, Ulu Gombak, Sl; endemic.

101.62.6 **Sauropus macranthus** Hassk., **TFM2** 131; *Sauropus spectabilis* Miq., **FMP3** 220; ?*Sauropus forcipatus* Hook.*f*., **FMP3** 220; shrub to 4 m tall; on limestone; only definite record is Batu Caves, Sl.

101.62.7 **Sauropus suberosus** Airy Shaw, **TFM2** 130; shrub to 3 m tall; on limestone hills; Pk, Ph; endemic.

101.62.8 **Sauropus villosus** (Blanco) Merr., **TFM2** 130; *Sauropus llanosii* (Müll.Arg.) Gage, **FMP3** 221; shrub to 1 m tall; usually on limestone; Ps, Kd, Kl, Ph.

101.63.1 **Sebastiania borneensis** Pax & K. Hoffm., **TFM2** 131; small tree to 12 m tall; lowland forest; once from Gg Arong F. R., Jh.

101.63.2 **Sebastiania chamaelea** (L.) Müll.Arg., **FMP3** 317, **TFM2** 131; herb to 90 cm tall; open sandy places near the sea; widespread.

101.64.1 **Spathiostemon javensis** Blume, **TFM2** 132; *Polydragma mallotiforme* Hook.*f*., **FMP3** 310; small tree; once collected in Pk.

101.65.1 **Sumbaviopsis albicans** (Blume) J.J.Sm., **TFM2** 132; tree to 10 m tall; on limestone; Tembeling and Bt Serdam, Ph.

101.66.1 **Suregada angustifolia** (Müll.Arg.) Airy Shaw, **TFM2** 133; small tree; montane forest; once from Gg Mersing, Ml.

101.66.2a **Suregada multiflora** (Juss.) Baill. var. **lamellata** Airy Shaw; **A03** 550, **TFM2** 133; small tree; once from Gua Musang, Kl; endemic variety.

101.66.2b **Suregada multiflora** (Juss.) Baill. var. **multiflora**, **TFM2** 133; *Gelonium bifarium* Roxb., **FMP3** 311; *Gelonium glomerulatum* Hassk., **FMP3** 311; *Gelonium multiflorum* Juss., **FMP3** 311; *Gelonium tenuifolium* Ridl., **FMP3** 312; shrub or small tree to 12 m tall; rocky and sandy shores, also inland in rocky places to 750 m; widespread.

101.67.1 **Trewia nudiflora** L., **TFM2** 134; tree to 12 m tall; lowlands; once each from Temiang and Kota Bahru, Kl.

101.68.1 **Trigonopleura malayana** Hook.*f*., **FMP3** 263, **TFM2** 134; *Peniculifera penangensis* Ridl., **FMP1** 290; tree to 27 m tall; lowland forest; widespread.

101.69.1 **Trigonostemon aurantiacus** (Kurz *ex* Teijsm. & Binn.) Boerl., **TFM2** 136; *Actephila aurantiaca* Ridl., **FMP3** 197; *Actephilopsis malayana* Ridl., **FMP3** 252; shrub to 3 m tall; lowlands, sometimes on limestone; Sl and Ph northward.

101.69.2 **Trigonostemon croceus** B.C. Stone, **S48** 249; tree to 8 m tall; lower montane forest at about 900 m; Genting Highlands, Sl; endemic.

101.69.3 **Trigonostemon diffusus** Merr. ssp. **condensus** R.I. Milne, **M41** 47; *Dimorphocalyx capillipes* Hook.*f*., **FMP3** 26; *Trigonostemon capillipes* (Hook.*f*.) Airy Shaw, **TFM2** 135; shrub to 3 m tall; lowlands; once from Kaki Bukit, Ps.

101.69.4 **Trigonostemon elegantissimus** Airy Shaw, **TFM2** 135; tree to 20 m tall; lowland forest; once from Ulu Endau, Jh.

101.69.5 **Trigonostemon laevigatus** Müll.Arg., **FMP3** 265, **TFM2** 135; tree to 7 m tall; coasts; P. Langkawi, Pn, Tg, Pk, P. Tioman, Jh.

101.69.6 **Trigonostemon longifolius** Baill., **FMP3** 264, **TFM2** 136; shrub or small tree to 4 m tall; lowland and hill forest to 600 m; throughout.

101.69.7 **Trigonostemon malaccanus** Müll.Arg., **FMP3** 265, **TFM2** 136; shrub; lowland forest; widely scattered.

101.69.8 **Trigonostemon philippinensis** Stapf, **A06** 355; *Trigonostemon sumatranus* (*non* Pax & K. Hoffm.) S. Moore, **TFM2** 135; tree to 7 m tall; lowland forest; Jh.

101.69.9 **Trigonostemon polyanthus** Merr., **M41** 30; *Trigonostemon borneensis* Merr., **TFM2** 136; shrub to 2 m tall; swampy lowland forest; twice from S.E. Jh.

101.69.10 **Trigonostemon rufescens** Jabl., **TFM2** 135; shrub; Jh; endemic.

101.69.11 **Trigonostemon sinclairii** Jabl., **TFM2** 135; slender treelet to 4 m tall; Kd, Kl, Tg; endemic.

101.69.12a **Trigonostemon verticillatus** (Jack) Pax *ex* Pax & K. Hoffm. var. **salicifolius** (Ridl.) Whitmore, **TFM2** 136; *Trigonostemon salicifolius* Ridl., **FMP3** 264; shrub to 1 m tall; Sl, Pk; ?endemic variety.

101.69.12b **Trigonostemon verticillatus** (Jack) Pax *ex* Pax & K. Hoffm. var. **verticillatus**, **TFM2** 136; *Trigonostemon indicus* (Baill.) Müll.Arg., **FMP3** 264; tree to 8 m tall; hill forest; Pn, Pk, Sl, Ml.

101.69.13 **Trigonostemon villosus** Hook.*f*., **FMP3** 265, **TFM2** 135, **M41** 47; shrub to 4 m tall; lowland forest; Tg and Pk southward; endemic type subspecies.

101.69.14 **Trigonostemon viridissimus** (Kurz) Airy Shaw, **A03** 545, **TFM2** 135; shrub to 90 cm tall; most but not all records from limestone; Ulu Gali and Bt Serdam, Ph.

101.69.15 **Trigonostemon wetriifolius** Airy Shaw & Ng, **A07** 237; unbranched treelet, to 3 m tall; lowland forest; Lesong F.R., Endau-Rompin, south Ph; endemic.

101.70.1 **Wetria insignis** (Steud.) Airy Shaw, **TFM2** 136; tree to 18 m tall; lowland forest; Pk, Ph, Sl; ?endemic.

102. FAGACEAE

102.1.1 **Castanopsis acuminatissima** (Blume) A. DC., **TFM1** 201, **FMı7** 307; *Pasania acuminatissima* (Blume) Oerst., **FMP3** 386; tree to 36 m tall, often multi–stemmed; montane forest above 700 m; Kd, Tg, Pk, Ph, Sl.

102.1.2 **Castanopsis cattapifolia** King *ex* Hook.*f*., **FMP3** 389, **TFM1** 201, **FMı7** 311; tree to 27 m tall; lowland forest; known only from type, Gopeng, Pk; endemic.

102.1.3 **Castanopsis costata** (Blume) A. DC., **FMP3** 390, **TFM1** 203, **FMı7** 312; tree to 36 m tall; lowland to lower montane forest; Pk, Ph, Jh.

102.1.4 **Castanopsis curtisii** King, **FMP3** 392, **TFM1** 204, **FMı7** 298; tree to 20 m tall; lowland forest; P. Langkawi, Kd, Pn, Sl.

102.1.5 **Castanopsis foxworthyi** Schottky, **FMı7** 309; tree 15–36 m tall; lowland peatswamp and heath forest, also upper montane forest; Tg.

102.1.6 **Castanopsis fulva** Gamble, **FMP3** 389, **TFM1** 204, **FMı7** 312; tree 18– 24 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Jh.

102.1.7 **Castanopsis inermis** (Lindl. *ex* Wall.) Benth. & Hook.*f*., **TFM1** 204, **FMı7** 315; *Castanopsis sumatrana* A. DC., **FMP3** 390; tree 10–30 m tall; lowland and hill forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

102.1.8 **Castanopsis javanica** (Blume) A. DC., **TFM1** 205, **FMı7** 306; *Pasania discocarpa* (Hance) Gamble, **FMP3** 386; tree to 40 m tall; lowland to lower montane forest at 1650 m; throughout.

102.1.9 **Castanopsis johorensis** Soepadmo, **TFM1** 205, **FMı7** 300; tree to 10 m tall; lowland forest; Jh.

102.1.10 **Castanopsis lucida** (Nees) Soepadmo, **TFM1** 205, **FMı7** 318; *Alseodaphne lucida* Nees, **FMP3** 100; *Castanopsis hullettii* King, **FMP3** 389; tree to 20 m tall; lowland to lower montane forest; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

102.1.11 **Castanopsis malaccensis** Gamble, **FMP3** 388, **TFM1** 206, **FMı7** 303; tree to 15 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.

102.1.12 **Castanopsis megacarpa** Gamble, **FMP3** 390, **TFM1** 206, **FMı7** 305; tree 12–36 m tall; lowland and hill forest to 600 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

102.1.13 **Castanopsis nephelioides** King *ex* Hook.*f*., **FMP3** 391, **TFM1** 207, **FMı7** 298; tree 10–20 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl, Jh, Sp; endemic.

102.1.14 **Castanopsis rhamnifolia** (Miq.) A. DC., **TFM1** 207, **FMı7** 299; tree 10–25 m tall; lowland to montane forest at 1600 m; Kl, Pk, Ph, Sl.

102.1.15 **Castanopsis schefferana** Hance, **TFM1** 207, **FMı7** 310; *Castanopsis andersonii* Gamble, FMP3 389; tree 10–24 m tall; lowland forest; Kd, Tg, Ph, NS, Jh, Sp.

102.1.16 **Castanopsis scortechinii** Gamble, **FMP3** 389, **TFM1** 208, **FMı7** 312; tree to 15 m tall; lower montane forest at 1000–1200 m; Pk, Ph; endemic.

102.1.17 **Castanopsis tunggurut** (Blume) A. DC., **TFM1** 208, **FMı7** 303; *Castanopsis ridleyi* Gamble, **FMP3** 391; tree 20–25 m tall; lowland forest; Sl, NS, Ml.

102.1.18 **Castanopsis wallichii** King *ex* Hook.*f.*, **FMP3** 391, **TFM1** 208, **FMı7** 300; tree 12–15 m tall; lowland forest; Kd, Pn, Pk, Sl, Ml, Sp; endemic.

102.2.1 **Lithocarpus bancanus** (Scheff.) Rehder, **TFM1** 213, **FMı7** 360; tree to 25 m tall; lowland forest; Ph, Jh.

102.2.2 **Lithocarpus bennettii** (Miq.) Rehder, **TFM1** 215, **FMı7** 356; *Pasania bennettii* (Miq.) Gamble, **FMP3** 381; tree to 35 m tall; lowlands and mountains; Kl, Ph, NS, Jh, Sp.

102.2.3 **Lithocarpus burkillii** A. Camus, **TFM1** 215, **FMı7** 329; *Pasania beccariana auct. non* (Benth.) Prantl, **FMP3** 387; tree about 24 m tall; montane forest at 1200 m; only known from type, Fraser's Hill, Ph; endemic.

102.2.4 **Lithocarpus cantleyanus** (King *ex* Hook.*f.*) Rehder, **TFM1** 216, **FMı7** 352; *Pasania cantleyana* (King *ex* Hook.*f.*) Gamble, **FMP3** 381; tree to 36 m tall; lowland and hill forest to 850 m; Kl, Pk, Ph, Sl, Jh, Sp.

102.2.5 **Lithocarpus clementianus** (King *ex* Hook.*f.*) A. Camus, **TFM1** 216, **FMı7** 365; *Pasania clementiana* (King *ex* Hook.*f.*) Gamble, **FMP3** 383; tree to 36 m tall; lower montane forest; Pn, Kl, Tg, Ph.

102.2.6 **Lithocarpus confragosus** (King *ex* Hook.*f.*) A. Camus, **TFM1** 216, **FMı7** 335; *Pasania confragosa* (King *ex* Hook.*f.*) Gamble, **FMP3** 385; tree to 29 m tall; hill forest; once from Keledang Saiong F.R., Pk.

102.2.7 **Lithocarpus conocarpus** (Oudem.) Rehder, **TFM1** 217, **FMı7** 349; *Pasania conocarpa* (Oudem.) Schottky, **FMP3** 380; tree to 45 m tall; lowland to montane forest at 1800 m; Kd, Pk, Sl, Sp.

102.2.8 **Lithocarpus coopertus** (Blanco) Rehder, **TFM1** 217, **FMı7** 335; tree to 45 m tall; montane forest; only known from Gg Tapis, Ph.

102.2.9 **Lithocarpus curtisii** (King *ex* Hook.*f.*) A. Camus, **TFM1** 217, **FMı7** 380; *Pasania curtisii* (King *ex* Hook.*f.*) Gamble, **FMP3** 380; tree to 27 m tall; lowland forest; Pn, Kl, Tg, Pk, Ph, Sl; endemic.

102.2.10 **Lithocarpus cyclophorus** (Endl.) A. Camus, **TFM1** 218, **FMi7** 345; *Pasania cyclophora* (Endl.) Gamble, **FMP3** 384; tree to 40 m tall; montane forest to 1800 m; widespread.

102.2.11 **Lithocarpus daphnoideus** (Blume) A. Camus, **TFM1** 218, **FMi7** 352; tree to 24 m tall; lowland forest; Kl, Pk, Ph.

102.2.12 **Lithocarpus eichleri** (Wenz.) A. Camus, **TFM1** 218, **FMi7** 218; *Pasania eichleri* (Wenz.) Gamble, **FMP3** 383; tree to 15 m tall; swampy lowland forest; Pk, Sl, Jh.

102.2.13 **Lithocarpus elegans** (Blume) Hatus. *ex* Soepadmo, **TFM1** 219, **FMi7** 366; *Pasania spicata* (*non* Humb. & Bonpl.) Rees, **FMP3** 377 incl. var. *gracilipes* (Miq.) Schottky; tree to 30 m tall; lowland and montane forest, often in disturbed sites; widespread.

102.2.14 **Lithocarpus encleisacarpus** (Korth.) A. Camus, **TFM1** 219, **FMi7** 338; *Pasania encleisacarpa* (Korth.) Gamble, **FMP3** 386 incl. var. *aperta* (King *ex* Hook.*f.*) Gamble; tree to 40 m tall; lowlands to 1300 m in the mountains; widespread and common.

102.2.15 **Lithocarpus erythrocarpus** (Ridl.) A. Camus, **TFM1** 219, **FMi7** 369; *Pasania erythrocarpa* Ridl., **FMP5** 336; tree to 24 m tall; hill forest, often on ridges; Tg, Ph, Sl, NS; endemic.

102.2.16 **Lithocarpus ewyckii** (Korth.) Rehder, **TFM1** 220, **FMi7** 351; *Pasania ewyckii* (Korth.) Gamble, **FMP3** 380 incl. var. *latifolia* King; *Pasania lamponga* (Miq.) Gamble var. *ewyckioides* Gamble, **FMP3** 378; tree to 30 m tall; common in the lowlands, rarer in the mountains; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

102.2.17 **Lithocarpus falconeri** (Kurz) Rehder, **TFM1** 220, **FMi7** 371; *Pasania falconeri* (Kurz) Schottky, **FMP3** 378; tree to 10 m tall; lowland forest; Ps, P. Langkawi, Kd, Pk.

102.2.18 **Lithocarpus gracilis** (Korth.) Soepadmo, **TFM1** 220, **FMi7** 362; *Pasania cyrtorhyncha* (Miq.) Gamble, **FMP3** 381; tree to 40 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Sl, NS, Jh, Sp.

102.2.19 **Lithocarpus hendersonianus** A. Camus, **TFM1** 221, **FMi7** 328; tree 20–30 m tall; montane forest at 1300–1500 m; Cameron Highlands, Ph.

102.2.20 **Lithocarpus hystrix** (Korth.) Rehder, **FMi7** 384; *Pasania hystrix* (Korth.) Gamble, **FMP3** 379; tree to 30 m tall; lowland to lower montane forest; Pn, Pk, Ph, Sl, NS, Jh, Sp.

102.2.21 **Lithocarpus javensis** Blume, **TFM1** 221, **FMi7** 325; tree 20–50 m tall; montane forest; once from Ulu Selangor, Sl.

102.2.22 **Lithocarpus kingianus** (Gamble) A. Camus, **TFM1** 221, **FMI7** 381; *Pasania kingiana* Gamble, **FMP3** 221; tree to 20 m tall; lower montane forest; Tg, Ph, Sl; endemic.

102.2.23 **Lithocarpus kingii** (A. Camus) Whitmore, **TFM1** 222; *Pasania costata auct. non* (Blume) Gamble, **FMP3** 384; *Lithocarpus perakensis* Soepadmo, *nom. superfl.*, **FMI7** 340; tree to 30 m tall; lowland to lower montane forest at 1200 m; Tg, Pk, Jh; endemic.

102.2.24 **Lithocarpus kunstleri** (King *ex* Hook.*f.*) A. Camus, **TFM1** 222, **FMI7** 372; *Pasania kunstleri* (King *ex* Hook.*f.*) Gamble, **FMP3** 376; tree to 15 m tall; lowland forest; Kd, Kl, Pk, Ph, Sl, NS, Jh; endemic.

102.2.25 **Lithocarpus lampadarius** (Gamble) A. Camus, **TFM1** 222, **FMI7** 368; *Pasania lampadaria* Gamble, **FMP3** 384; tree to 36 m tall; mostly montane forest; Tg, Pk, Ph.

102.2.26 **Lithocarpus longispinus** Barnett, **TFM1** 223, **FMI7** 334; tree 8–30 m tall; lowland forest; Pk, Sl.

102.2.27 **Lithocarpus lucidus** (Roxb.) Rehder, **TFM1** 223, **FMI7** 341; *Pasania lucida* (Roxb.) Gamble, **FMP3** 383; *Pasania omalokos* (Korth.) Schottky, **FMP3** 383; tree to 40 m tall; forests to 1600 m; throughout.

102.2.28 **Lithocarpus macphailii** (M.R. Hend.) Barnett, **TFM1** 223, **FMI7** 339; *Pasania macphailii* M.R. Hend., **H32** 76; tree to 45 m tall; lowland to montane forest; Kl, Tg, Pk, Ph, Sl, Jh.

102.2.29 **Lithocarpus maingayi** (Benth.) Rehder, **TFM1** 224, **FMI7** 331; *Pasania maingayi* (Benth.) Schottky, **FMP3** 387; tree 10–15 m tall; hill forest at 600–1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.

102.2.30 **Lithocarpus neorobinsonii** A. Camus, **TFM1** 224, **FMI7** 336; *Pasania blumeana sensu* Ridl., **FMP3** 385; *Pasania robinsonii* (Ridl.) Gamble, **FMP3** 387; tree to 15 m tall; montane forest at 1500–1700 m; Ph, Sl.

102.2.31 **Lithocarpus pattaniensis** Barnett, **TFM1** 224, **FMI7** 336; tree to 20 m tall; montane forest at 1500–1700 m; Kl, Pk, Ph, Sl.

102.2.32 **Lithocarpus rassa** (Miq.) Rehder, **TFM1** 225, **FMI7** 364; *Pasania rassa* (Miq.) Gamble, **FMP3** 382 incl. var. *lanuginosa* Ridl.; *Pasania wenzigiana* (King *ex* Hook.*f.*) Gamble, **FMP3** 382; tree to 24 m tall; lowlands but commoner in the mountains; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

102.2.33 **Lithocarpus scortechinii** (King *ex* Hook.*f.*) A. Camus, **TFM1** 225, **FMI7** 380; *Pasania scortechinii* (King *ex* Hook.*f.*) Schottky, **FMP3** 376; tree to 20 m tall; hill forest; Kl, Pk, Ph.

102.2.34 **Lithocarpus suffruticosus** (Ridl.) Soepadmo, **TFM1** 226, **FMi7** 366; *Pasania rassa* (Miq.) Gamble var. *suffruticosa* Ridl., **FMP3** 382; shrub or tree 3–15 m tall; montane forest; Tg, Pk, Ph, Sl.

102.2.35 **Lithocarpus sundaicus** (Blume) Rehder, **TFM1** 226, **FMi7** 375; *Pasania sundaica* (Blume) Oerst., **FMP3** 379; *Pasania grandifrons* (King *ex* Hook.*f.*) Gamble, **FMP3** 377; *Pasania lamponga* (Miq.) Gamble, **FMP3** 378; tree to 36 m tall; lowland forest; widespread and common.

102.2.36 **Lithocarpus urceolaris** (Jack) Merr., **TFM1** 226, **FMi7** 344; tree to 33 m tall; lowland to lower montane forest; Tg, Ph, Jh.

102.2.37 **Lithocarpus wallichianus** (Lindl. *ex* Hance) Rehder, **TFM1** 227, **FMi7** 368; *Pasania wallichiana* (Lindl. *ex* Hance) Gamble, **FMP3** 378; tree to 30 m tall; lowland and hill forest; throughout.

102.2.38 **Lithocarpus wrayi** (King) A. Camus, **TFM1** 227, **FMi7** 334; *Pasania wrayi* (King) Gamble, **FMP3** 385; *Pasania lappacea auct. non* Oerst., **FMP3** 375; tree 12–30 m tall; lowland to lower montane forest at 1350 m; Kd, Kl, Tg, Pk, Ph, NS.

102.3.1 **Quercus argentata** Korth., **FMP3** 373, **TFM1** 228, **FMi7** 389; tree to 37 m tall; lowland to montane forest; Tg, Ph, Ml, Jh, Sp.

102.3.2 **Quercus elmeri** Merr., **TFM1** 229, **FMi7** 398; tree to 40 m tall; montane forest; Ph.

102.3.3 **Quercus gaharuensis** Soepadmo, **TFM1** 229, **FMi7** 391; *Quercus oidocarpa auct. non* Korth., **FMP3** 373 in part; tree to 30 m tall; lowland to lower montane forest; Pn, Pk, Sl.

102.3.4 **Quercus gemelliflora** Blume, **TFM1** 229, **FMi7** 395; *Quercus turbinata* Blume var. *crassilamellata* Gamble, **FMP3** 373; tree to 30 m tall; lowland to lower montane forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

102.3.5 **Quercus lineata** Blume, **TFM1** 230, **FMi7** 396; tree to 30 m tall; montane forest; Tg, Ph.

102.3.6 **Quercus nivea** King, **TFM1** 231, **FMi7** 391; tree to 25 m tall; hill forest; Kl, Tg, Ph.

102.3.7 **Quercus oidocarpa** Korth., **FMP3** 373 in part, **FMi7** 392; tree to 30 m tall; lowland and hill forest; Ph, Sl.

102.3.8 **Quercus subsericea** A. Camus, **TFM1** 231, **FMi7** 393; tree to 15 m tall; lowland to lower montane forest; Kl, Pk, Ph, NS, Ml.

102.4.1 **Trigonobalanus verticillata** Forman, **TFM1** 232, **FMi7** 400; tree to 36 m tall, often suckering; montane forest; Ph.

103. FLACOURTIACEAE

103.1.1 **Casearia albicans** Wall. *ex* C.B. Clarke, **FMP1** 833, **FMi5** 89, **TFM2** 140; tree to 10 m tall; lowland forest to 550 m; Pn, Pk; endemic.

103.1.2 **Casearia capitellata** Blume, **FMi5** 102, **TFM2** 141; *Casearia latifolia* Ridl., **FMP1** 831; shrub or small tree to 4 m tall; lowland forest; Pn, Tg, Pk, Ph, Sl.

103.1.3a **Casearia clarkei** King var. **clarkei**, **FMP1** 833, **FMi5** 99, **TFM2** 141; tree 10–15 m tall; lowland and hill forest to 1000 m; Pn, Pk, Sl, Ml, Sp; endemic.

103.1.3b **Casearia clarkei** King var. **kunstleri** (King) Ridl., **FMP1** 833, **FMi5** 100; tree 20–28 m tall; lowland forest; Pk, Ph, Sl, Jh; endemic.

103.1.4 **Casearia flavovirens** Blume, **FMi5** 100, **TFM2** 140; *Casearia pallida* Craib, **FMI5** 98; hill forest; P. Langkawi, Kl, Sl.

103.1.5 **Casearia flexula** Ridl., **FMP1** 832, **FMi5** 102, **TFM2** 140; shrub to 7.5 m tall; montane forest at 660–1200 m; only known with certainty from Gg Jerai, Kd; endemic.

103.1.6a **Casearia grewiifolia** Vent. var. **deglabrata** Koord. & Valeton, **FMi5** 95, **TFM2** 142; *Casearia leucolepis* Turcz., **FMP1** 831; shrub or tree; lowland forest; Pk, Tg, Jh.

103.1.6b **Casearia grewiifolia** Vent. var. **grewiifolia**, **FMP1** 830, **FMi5** 93, **TFM2** 142; shrub or tree to 24 m tall; lowland forest; Pk, Jh.

103.1.7 **Casearia lobbiana** Turcz., **FMP1** 830, **FMi5** 89, **TFM2** 140; shrub or small tree to 12 m tall; lowland and hill forest to 1000 m; Pn, Pk, Sl, NS, Ml, Sp.

103.1.8 **Casearia macrocarpa** C.B. Clarke, **FMP1** 833, **FMi5** 100, **TFM2** 140; tree to 6 m tall; hill forest; Pn; endemic.

103.1.9 **Casearia minutiflora** Ridl., **FMP5** 311, **FMi5** 101, **TFM2** 140; shrub 1.5 m tall; montane forest at 1200–1300 m; Ph; endemic.

103.1.10 **Casearia tuberculata** Blume, **FMi5** 99, **TFM2** 141; *Casearia coriacea auct. non* Vent., **FMP1** 832; small tree; lowland to montane forest; Pk, Ph.

103.1.11 **Casearia velutina** Blume, **FMi5** 91, **TFM2** 140; shrub or small tree to 15 m tall; lowlands; Kd.

103.1.12 **Casearia velutinosa** Ridl., **FMP1** 831, **FMi5** 89, **TFM2** 140; shrub or occasionally small tree reaching 10 m tall; lowland forest often near streams; Tg, Pk, Sl, Jh.

103.2.1 **Erythrospermum candidum** (Becc.) Becc., **FMi5** 7, **TFM2** 143; *Erythrospermum scortechinii* King, **FMP1** 157; tree to 15 m tall; ridge-top forest to 450 m; Pk, Ph, Sl, NS, Ml.

103.3.1 **Flacourtia rukam** Zoll. & Moritzi, **FMP1** 157, **FMi5** 73, **TFM2** 144; small thorny tree; lowland forest; widespread.

103.4.1 **Hemiscolopia trimera** (Boerl.) Slooten, **FMi5** 65, **TFM2** 144; tree to 10 m tall; coastal forest; Ph, Ml, Jh (mostly offshore).

103.5.1 **Homalium caryophyllaceum** (Zoll. & Moritzi) Benth., **FMi5** 58, **TFM2** 145; *Homalium frutescens* Warb., **FMP1** 836; tree to 6 m tall; swampy lowland forest; central and south Malaya.

103.5.2 **Homalium dasyanthum** (Turcz.) W. Theob., **FMi5** 56, **TFM2** 145, **M06** 155; *Homalium griffithianum* Kurz, **FMP1** 835; tree to 30 m tall; near the coast, including limestone areas; P. Langkawi, Kd, Ph, Jh.

103.5.3 **Homalium dictyoneurum** (Hance) Warb., **FMi5** 565, **TFM2** 146; tree to 36 m tall; lowland forest; Kd, Tg, Jh.

103.5.4 **Homalium foetidum** (Roxb.) Benth., **FMi5** 57, **TFM2** 146; *Homalium propinquum* C.B. Clarke, **FMP1** 835; tree to 24 m tall; lowland forest often near rivers; Pn, Kl, Pk, Ml.

103.5.5 **Homalium grandiflorum** Benth., **FMP1** 837, **FMi5** 62, **TFM2** 146; tree to 36 m tall; lowland forest; Sl, NS, Ml, Sp.

103.5.6 **Homalium kunstleri** King, **FMP1** 825, **FMi5** 56, **TFM2** 145, **C14** 143; tree 6–14 m tall; on limestone; only known from near Larut, Pk; endemic.

103.5.7 **Homalium longifolium** Benth., **FMP1** 834, **FMi5** 55, **TFM2** 146; tree to 42 m tall; lowland forest; widespread.

103.5.8 **Homalium spathulatum** Ridl., **FMP1** 835, **FMi5** 59, **TFM2** 145; tree; lowland forest; only known from type, P. Pangkor, Pk; endemic.

103.5.9 **Homalium undulatum** King, **FMP1** 837, **FMi5** 61, **TFM2** 145, **C14** 143; tree to 20 m tall; limestone hills; P. Langkawi, Pk.

103.6.1 **Hydnocarpus castanea** Hook.*f.* & Thomson, **FMP1** 159, **FMi5** 26, **TFM2** 150; tree to 30 m tall; lowlands to 460 m; P. Langkawi, Pn, Tg, Pk, Ph, NS, Jh.

103.6.2 **Hydnocarpus cucurbitina** King, **FMP1** 161, **FMi5** 25; tree to 9 m tall; lowland forest; Pk, Ph, Jh; endemic.

103.6.3 **Hydnocarpus curtisii** King, **FMP1** 160, **FMi5** 27, **TFM2** 150; tree to 30 m tall; lowland forest; P. Langkawi, Pn, Tg, Pk, Ph, NS, Jh.

103.6.4 **Hydnocarpus filipes** Symington *ex* Sleumer, **FMi5** 26, **TFM2** 150; tree to 36 m tall; lowland forest; Tg, Pk, Ph, Sl; endemic.

103.6.5 **Hydnocarpus humei** Ridl., **FMi5** 19, **TFM2** 149; tree to 10 m tall; lowland and hill forest; Larut, Pk, and Klang Gates, Sl; endemic.

103.6.6 **Hydnocarpus ilicifolia** King, **FMP1** 161, **FMi5** 19, **TFM2** 149, **C14** 143; small prickly-leaved tree; on limestone; Ps, P. Langkawi, Kd, Ph.

103.6.7a **Hydnocarpus kunstleri** (King) Warb. var. **kunstleri**, **FMi5** 20, **TFM2** 150; *Teraktogenos kunstleri* King, **FMP1** 162; *Teraktogenos scortechinii* King, **FMP1** 162; tree to 21 m tall; lowland and hill forest to 1000 m; Pk, Ph, Sl.

103.6.7b **Hydnocarpus kunstleri** (King) Warb. var. **tomentosa** (King) Sleumer, **FMi5** 21, **TFM2** 152; *Teraktogenos kunstleri* King var. *tomentosa* (King) Ridl., **FMP1** 163; tree to 21 m tall; lowland and hill forest; Tg, Pk, Ph, Sl, Jh; endemic variety.

103.6.8 **Hydnocarpus kurzii** (King) Warb. ssp. **australis** Sleumer, **FMi5** 21, **TFM2** 150; tree to 16 m tall; lowland to montane forest; Kl, Ph, Pk.

103.6.9 **Hydnocarpus nana** King, **FMP1** 159, **FMi5** 24, **TFM2** 149; shrub or tree to 6 m tall; lowland forest; widespread, commoner in the north; endemic.

103.6.10 **Hydnocarpus scortechinii** King, **FMP1** 161, **FMi5** 27, **TFM2** 149; tree; lowland forest; P. Pangkor & Dindings, Pk; endemic.

103.6.11 **Hydnocarpus woodii** Merr., **FMi5** 28, **TFM2** 152; tree to 36 m tall; lowland and hill forest to 1000 m; Ps, Tg, Pk, Ph, Sl, NS, Jh.

103.6.12 **Hydnocarpus wrayi** King, **FMP1** 161, **FMi5** 22, **TFM2** 149; small tree occasionally reaching 21 m tall; lowland forest, sometimes at greater altitudes; Kl, Tg, Pk, Ph, Jh.

103.7.1 **Osmelia maingayi** King, **FMP1** 833, **FMi5** 153, **TFM2** 153; tree to 12 m tall; lowland forest; widespread.

103.7.2 **Osmelia philippina** (Turcz.) Benth., **FMi5** 79, **TFM2** 153; tree to 12 m tall; lowland forest; Pk, Sp; [doubtfully distinct from previous species].

103.8.1 **Pangium edule** Reinw., **FMP1** 163, **FMi5** 36, **TFM2** 155; tree to 20 m tall; around villages, possibly not wild; widespread.

103.9.1 **Ryparosa fasciculata** King, **FMP1** 166, **FMi5** 43, **TFM2** 158; tree to 6 m tall; lowland forest; Ml and Ph northward; endemic.

103.9.2 **Ryparosa hullettii** King, **FMP1** 165, **FMi5** 48, **TFM2** 159; shrub or tree to 20 m tall; swampy lowland forest; Tg, Pk, Jh, Sp.

103.9.3 **Ryparosa javanica** Kurz *ex* Koord., **FMi5** 45, **TFM2** 159; *Ryparosa wrayi* King, FMP1 164; tree to 20 m tall; lowland forest; Pk, Ph, Sl.

103.9.4 **Ryparosa kunstleri** King, **FMP1** 165, **FMi5** 48, **TFM2** 159; *Xanthophyllum hebecarpum* Chodat, **FMP1** 149; tree to 18 m tall; lowland to montane forest at 1200 m; Kd, Pk, Ph, Sl.

103.9.5 **Ryparosa scortechinii** King, **FMP1** 166, **FMi5** 42, **TFM2** 159; small tree to 12 m tall; lowland and hill forest to 900 m; Pn & Kl southward; endemic.

103.9.6 **Ryparosa wallichii** Ridl., **FMP1** 165, **FMi5** 44; *Ryparosa acuminata sensu* Whitmore, **TFM2** 159; tree; lowland forest; Pn, Ph, Sl, NS.

103.10.1 **Scaphocalyx spathacea** Ridl., **FMP1** 164, **FMi5** 35, **TFM2** 159; *Scaphocalyx parviflora* Ridl., **FMP1** 164, **FMi5** 35; tree to 15 m tall; lowland forest; Kl, Ph, Sl, NS, Ml, Jh; endemic.

103.11.1 **Scolopia macrophylla** (Wight & Arn.) Clos, **FMi5** 8, **TFM2** 160; *Scolopia rhinanthera* (Benn. & Br.) Clos, **FMP1** 155; spiny tree to 9 m tall; lowlands, usually coastal; widespread.

103.11.2 **Scolopia spinosa** (Roxb.) Warb., **FMi5** 10, **TFM2** 160; *Scolopia roxburghii* (Benn.) Clos, **FMP1** 156; spiny tree to 15 m tall; lowlands; widespread.

103.11.3 **Scolopia steenisiana** Sleumer, **TFM2** 161, **C14** 144; tree to 15 m tall; on limestone; Kl, Sl; endemic.

104. GENTIANACEAE

104.1.1 **Canscora andrographioides** Griff. *ex* C.B. Clarke, **FMP2** 433, **U01** 77; herb to 30 cm tall; montane forest; Gg Jerai, Kd.

104.1.2 **Canscora pentanthera** C.B. Clarke, **FMP2** 433, **C14** 144, **U01** 74; herb to 50 cm tall; mostly on dry limestone hills; Sl northward.

104.1.3 **Canscora trinervia** Ridl., **FMP2** 433; herb to 15 cm tall; banks of montane streams; Gg Tahan, Ph; endemic.

104.2.1 **Crawfurdia trinervis** (Blume) Dietr., **U01** 89; *Crawfurdia blumei* G. Don, **FMP2** 434; slender climber; upper montane forest; Pk, Ph.

104.3.1 **Exacum tetragonum** Roxb., **FMP2** 432, **C14** 144, **U01** 79; herb to 1 m tall; open grassy places; Pk northward.

104.4.1 **Gentiana malayana** Ridl., **FMP2** 434; herb to 10 cm tall; on damp rocks in high mountains; Gg Benom & Gg Tahan, Ph; endemic.

104.5.1 **Microrphium pubescens** C.B. Clarke, **FMP2** 434, **C14** 144, **U01** 82; herb to 1 m tall; on limestone; P. Langkawi, Ph.

105. GESNERIACEAE

105.1.1 **Aeschynanthus albidus** (Blume) Steud., **B52** 479; *Aeschynanthus purpurascens* Hassk., **FMP2** 497; slender erect epiphyte; lowland forest; Kl, Jh, Sp.

105.1.2 **Aeschynanthus angustifolius** (Blume) Steud., **W33** 22; *Aeschynanthus stenophyllus* Ridl., **FMP2** 498; slender epiphyte shrub; lowlands and hills; Pk, Jh.

105.1.3 **Aeschynanthus fecundus** P. Woods, **B52** 482; *Aeschynanthus breviflorus* [*non* (S. Moore) K. Schum.] Ridl., **FMP2** 497; tufted epiphyte to 30 cm tall; lowland forest near rivers; once from Telom, Ph.

105.1.4 **Aeschynanthus flippancei** Ridl., **R14** 473; creeping herb; lowlands; Balik Pulau, Pn; endemic.

105.1.5 **Aeschynanthus lamponga** Miq. var. **parvifolius** Ridl., **FMP5** 324; slender creeper; Kuala Teku, Ph; endemic variety.

105.1.6 **Aeschynanthus lanceolatus** Ridl., **FMP5** 324; slender epiphyte; montane forest; Fraser's Hill, Ph; endemic.

105.1.7 **Aeschynanthus longicalyx** Ridl., **FMP2** 499; small shrub about 30 cm tall; montane forest; Pk, Ph, Sl; endemic.

105.1.8 **Aeschynanthus longicaulis** Wall. *ex* R.Br., **B52** 481; *Aeschynanthus marmoratus* T. Moore, **FMP2** 498; trailing epiphyte or epilith; on limestone; Kaki Bukit and Bt Bintang, Ps.

105.1.9 **Aeschynanthus longiflorus** DC., **FMP2** 498; small shrub to 30 cm tall; lowland forest; Ph.

105.1.10 **Aeschynanthus myrmecophilus** P. Woods, **B52** 483; *Aeschynanthus hildebrandii auct. non* Hemsl., **FMP2** 499; shrubby epiphyte to 60 cm long; montane forest; Pk, Ph; endemic.

105.1.11 **Aeschynanthus obconicus** C.B. Clarke, **FMP2** 500 '*obconica*'; slender climber; lowland and hill forest; Pk, Sl.

105.1.12 **Aeschynanthus parvifolius** R.Br., **FMP2** 500; creeping epiphyte; lowland to montane forests; widespread.

105.1.13 **Aeschynanthus perakensis** Ridl., **FMP2** 498; shrub to 60 cm tall; montane forest; Pk, Ph; endemic.

105.1.14a **Aeschynanthus radicans** Jack var. **lanuginosus** Ridl., **FMP2** 500 '*lanuginosa*'; creeping epiphytic or epilithic herb; lowland forest; Pk.

105.1.14b **Aeschynanthus radicans** Jack var. **radicans**, **FMP2** 500; creeping epiphytic or epilithic herb; lowland forest; widespread.

105.1.15 **Aeschynanthus rhododendron** Ridl., **FMP2** 499; erect shrub to 60 cm tall; montain forests; Taiping Hills, Pk; endemic.

105.1.16 **Aeschynanthus speciosus** Hook., **FMP2** 498; small shrub about 30 cm tall; hill forests; Pk, Sl, Ph.

105.1.17 **Aeschynanthus wallichii** R.Br., **FMP2** 500; slender woody creeper; lowland and montane forest; scattered.

105.2.1 **Agalmyla parasitica** (Lam.) Kuntze, **B44** 224; *Agalmyla staminea* (Vahl) Blume, **FMP2** 501; climbing epiphytic shrub; hill and montane forest; Pk, Ph, Sl.

105.3.1 **Boea minutiflora** Ridl., **FMP2** 537, **B49** 420; herb to 10 cm tall; on limestone; known only from type, Gg Senyum, Ph; endemic.

105.4.1 **Boeica brachyandra** Ridl., **FMP2** 538, **B46** 370; stemless herb with woody rootstock; hill forest on sandstone; only known from Gg Chinchang, P. Langkawi; endemic.

105.4.2 **Boeica nutans** Ridl., **FMP2** 538, **B46** 372; stemless herb; montane forest; only known from type, Gg Kerbau, Pk; endemic.

105.5.1 **Chirita caliginosa** C.B. Clarke, **FMP2** 524, **W31** 186; *Chirita parvula* Ridl., **FMP2** 524; herb 30–40 cm tall; limestone rocks and cliffs; Pk, Ph, Sl.

105.5.2 **Chirita elata** Ridl., **FMP2** 524, **W31** 189; herb to 60 cm tall; montane forest; Taiping Hills, Pk; endemic.

105.5.3 **Chirita glasgovii** Ridl., **FMP2** 526; weak herb to 30 cm tall; probably known only from type; Pk.

105.5.4 **Chirita involucrata** Craib, **W31** 199; herb to 45 cm tall; on limestone; Kd, Kl.

105.5.5 **Chirita lacunosa** (Hook.*f.*) B.L. Burtt, **W31** 151; *Didymocarpus lacunosus* Hook.*f.*, **FMP2** 510; stemless herb to 15 cm tall; crevices in limestone; P. Langkawi and Gua Badak, Pk.

105.5.6 **Chirita rupestris** Ridl., **FMP2** 525, **W31** 201; herb 10–30 cm tall; on limestone; Ps, P. Langkawi.

105.5.7 **Chirita sericea** Ridl., **FMP2** 525 incl. var. *scortechinii* Ridl., **W31** 187; silky herb to 25 cm tall; limestone rocks; Kd, Pk; endemic.

105.5.8 **Chirita viola** Ridl., **FMP2** 525, **W31** 190; weak herb to 25 cm tall; often, but not always, on limestone; P. Langkawi, Kd, Kl, Ph;

Wood's [**W31** 191] single record of *Chirita hamosa* R.Br. from P. Langkawi is *C. viola* (B.L. Burtt *in litt.*).

105.6.1 **Cyrtandra barbata** Ridl., **FMP2** 547; herb; lowland forest; Temengoh, Pk; endemic.

105.6.2a **Cyrtandra cupulata** Ridl. var. **cupulata**, **FMP2** 546; shrub to 1 m tall; lowland and hill forest; Kd, Kl, Ph, Sl, Ml; endemic.

105.6.2b **Cyrtandra cupulata** Ridl. var. **minor** Ridl., **FMP2** 547; shrub to 1 m tall; lowland forest; Kl; endemic.

105.6.3 **Cyrtandra dispar** DC., **FMP2** 544; shrub to 1 m tall; montane forests; Pn, Pk.

105.6.4 **Cyrtandra falcata** Ridl., **FMP2** 545; epiphyte about 60 cm tall; lowland forest; Pk, Sl; endemic.

105.6.5 **Cyrtandra gimlettii** Ridl., **FMP2** 546; herb to 15 cm tall; lowland forest; Kuala Lebir, Kl.

105.6.6 **Cyrtandra lanceolata** Ridl., **FMP2** 546; herb to 30 cm tall; montane forest; Gg Panti, Jh; ?endemic.

105.6.7 **Cyrtandra patula** Ridl., **FMP2** 545; spreading shrub to 2 m tall; wet lowland forest; Bt Tangga, NS.

105.6.8 **Cyrtandra pendula** Blume, **FMP2** 544; creeping herb; lowland forests; widespread.

105.6.9 **Cyrtandra rotundifolia** Ridl., **FMP2** 545; herb to 10 cm tall; lowland forests; Pk.
This species should probably be sunk into *C. pendula* (B.L. Burtt *pers. comm.*).

105.6.10 **Cyrtandra suffruticosa** Ridl., **FMP2** 545; shrub to 130 cm tall; on rocks or epiphytic; Pk, Ph, Jh; ?endemic.

105.6.11 **Cyrtandra stonei** B.L. Burtt, **B51** 229; *Cyrtandra dispar* DC. var. *glabriflora* B.C. Stone, **S48** 262; shrub to 2 m tall; montane forest about 1500 m; only known from Gg Ulu Kali, Ph; endemic.

105.6.12 **Cyrtandra wallichii** (C.B. Clarke) B.L. Burtt, **B47** 179; *Cyrtandra pilosa auct. non* Blume, **FMP2** 545; *Cyrtandra grandiflora* (*non* Gaudich.) Ridl., **FMP2** 546; shrub to 1 m tall; on banks in lowland and hill forest; widespread.

105.7.1 **Didissandra atrocyanea** Ridl., **FMP2** 503; woody-stemmed 'herb' to 15 cm tall; montane forest; Pk; endemic.

105.7.2 **Didissandra atropurpurea** Ridl., **FMP2** 504; 'herb' with short woody stem; montane forest; Pk; endemic.

105.7.3 **Didissandra castaneifolia** Ridl., **FMP2** 505; short-stemmed herb; on rocks; Kuala Teku, Ph; endemic.

105.7.4 **Didissandra frutescens** C.B. Clarke, **FMP2** 502; shrub about 1 m tall; damp spots in lowland and hill forest.

105.7.5 **Didissandra glabrescens** Ridl., **FMP2** 505; woody-stemmed herb to 10 cm tall; montane forest; Pk; endemic.

105.7.6 **Didissandra hirta** Ridl., **FMP2** 503; woody-stemmed herb to 20 cm tall; forest; Gg Bujong Malacca, Pk; endemic.

105.7.7 **Didissandra johorica** Ridl., **FMP2** 502; herb to 1 m tall; hill forest; Gg Panti, Jh; endemic.

105.7.8 **Didissandra kiewii** Kiew, **K29** 212; woody-stemmed herb to 15 cm tall; lowland forest; Sg Selai, Jh; endemic.

105.7.9 **Didissandra longisepala** Ridl., **FMP2** 503; herb to 15 cm tall; montane forest; Cameron Highlands, Ph; endemic.

105.7.10 **Didissandra morganii** Franch., **B42** 100; *Didissandra filicina* Ridl., **FMP2** 505; shrublet to 15 cm tall; montane forest; Pk, Ph, Ml; endemic.

105.7.11 **Didissandra petiolata** Ridl., **FMP2** 504; woody-stemmed 'herb'; montane forest; Gg Inas, Pk; endemic.

105.7.12 **Didissandra porphyrantha** A. Weber & Kiew, **K48** 1; woody-stemmed 'herb' to 50 cm tall; shaded slopes in lowland and hill forest; Sl; endemic.

105.7.13 **Didissandra quercifolia** Ridl., **FMP2** 505; woody-stemmed 'herb' to 15 cm tall; lower montane forest; Pk; endemic.

105.7.14 **Didissandra serratifolia** Ridl., **FMP2** 503; woody-stemmed 'herb' to 15 cm tall; montane forest; Gg Bujong Malacca, Pk; endemic.

105.7.15 **Didissandra violacea** Ridl., **FMP2** 504; woody-stemmed 'herb' to 15 cm tall; upper montane forest; summit of Gg Batu Puteh, Pk; endemic.

105.7.16 **Didissandra wrayi** Ridl., **FMP2** 504; woody-stemmed 'herb'; montane forest; Pk, Ph; endemic.

Didissandra flammea Ridl. [**FMP2** 504] and *D. latisepala* Ridl. [**FMP2** 503] have only been recorded from north of the Thai border.

105.8.1 **Didymocarpus albinellus** Ridl., **FMP2** 512; hairy herb to 40 cm tall; montane forest; Ph; endemic.

105.8.2 **Didymocarpus albinus** Ridl., **FMP2** 512; shrub to 1.5 m tall; lower montane forest; Pk, Ph, Sl.

105.8.3a **Didymocarpus albus** Ridl. var. **albus**, **FMP2** 517; woody creeper; montane forest; Pk; endemic.

105.8.3b **Didymocarpus albus** Ridl. var. **major** Ridl., **FMP2** 517; woody creeper; montane forest; Pk; endemic.

105.8.4 **Didymocarpus albomarginatus** Hemsl., **FMP2** 515; herb to 30 cm tall; montane forest; Taiping Hills, Pk; endemic.

105.8.5 **Didymocarpus alternans** Ridl., **FMP2** 513; herb about 30 cm tall; montane forest; Pk; endemic.

105.8.6 **Didymocarpus antirrhinoides** A. Weber, **W06** 303; *Didymocarpus corchorifolius auct. non* DC., **FMP2** 508 in part; *Didymocarpus sp.*, **W06** 305; shrub 1–1.5 m tall; hill forest; Pk, Ph, Sl, NS, Jh; endemic.

105.8.7 **Didymocarpus anthonyi** Kiew, **K39** 24; woody-stemmed 'herb' to 40 cm tall; earth banks in lowland forest; Ulu Besut, Tg; endemic.

105.8.8 **Didymocarpus ascendens** Ridl., **FMP2** 517; creeping herb to 25 cm tall; lowland forest; Kl, Pk.

105.8.9 **Didymocarpus atrosanguineus** Ridl., **FMP2** 518, **K30** 49; woody-stemmed 'herb' to 20 cm tall; lowland forest; Kl, Tg, Ph; endemic.

105.8.10 **Didymocarpus bombycinus** Ridl., **FMP2** 518; shrub to 1 m tall; lowland forest; Pk; endemic.

105.8.11 **Didymocarpus breviflorus** (Ridl.) A. Weber & Kiew, **K48** 7; *Didissandra breviflora* Ridl., **R14** 474; woody-stemmed herb 10–25 cm tall; steep slopes and rock faces in hill forest; Sl; endemic.

105.8.12 **Didymocarpus caelestis** (Ridl.) Kiew, **K36** 175; *Codonoboea caelestis* Ridl., **R15** 259; woody-stemmed 'herb'; streambanks in lowland forest; only known from Gua Musang, Kl (not on limestone); endemic.

105.8.13 **Didymocarpus campanulatus** (Ridl.) B.L. Burtt, **B45** 44; *Paraboea campanulata* Ridl., **FMP2** 529; herb to 30 cm tall; montane forest; Semangkok Pass, Sl; endemic.

105.8.14 **Didymocarpus calcareus** Ridl., **R15** 258, **C14** 153, **K44** 204; woody-stemmed 'herb'; montane forest, not on limestone; only known from the summit of Gg Stong, Kl; endemic.

105.8.15 **Didymocarpus castaneifolius** Ridl., **FMP2** 514, **K44** 205; woody-stemmed 'herb' to 15 cm tall; montane forest at 1700 m; Gg Inas, Pk; endemic.

105.8.16 **Didymocarpus codonion** Kiew, **K30** 49; woody-stemmed 'herb' to 20 cm tall; on earth banks in lowland forest; Tg, Ph; endemic.

105.8.17 **Didymocarpus corchorifolius** Wall. *ex* DC., **FMP2** 508 in part, **W06** 301; shrub to 2 m tall; hill forest; Pn.

105.8.18 **Didymocarpus cordatus** A. DC., **B49** 427; *Paraboea cordata* (A. DC.) Ridl., **FMP2** 528 incl. vars. *debilis* Ridl. and *ophirensis* Ridl.; herb to 60 cm tall; hill and lower montane forest; widespread in the mountains.

105.8.19 **Didymocarpus corneri** Kiew, **K36** 172; shrub to 1.5 m tall; on banks in lowland forest; only known from Kemaman, Tg; endemic.

105.8.20 **Didymocarpus craspedodromus** Kiew, **K30** 213; shrub to 1 m tall; lowland and hill forest on banks and steep slopes; Ph, Jh; endemic.

105.8.21a **Didymocarpus crinitus** Jack var. **crinitus**, **FMP2** 519, **K30** 50; woody-stemmed 'herb' to 20 cm tall; lowland and hill forest; Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Jh.

105.8.21b **Didymocarpus crinitus** Jack var. **elongatus** Ridl., **FMP2** 520 'elongata', herb; Pk.

105.8.22 **Didymocarpus croceus** Ridl., **FMP2** 516; succulent creeping herb; montane forest; Pk; endemic.

105.8.23 **Didymocarpus curtisii** (Ridl.) Ridl., **FMP2** 520; woody-stemmed 'herb' to 15 cm tall; montane forest; Semangkok Pass, Sl; endemic.

105.8.24 **Didymocarpus davisonii** Kiew, **K34** 242; woody-stemmed 'herb' to 20 cm tall; on shaded sandstone boulders to 500 m; Ph, Jh; endemic.

105.8.25 **Didymocarpus dawnii** Kiew, **K43** 201; low woody-stemmed 'herb'; hill forest at about 1000 m; known from two localities in Temengor F.R., Pk; endemic.

105.8.26 **Didymocarpus densifolius** Ridl., **FMP2** 521, **K29** 216; *Paraboea densifolia* (Ridl.) M.R. Hend., **H34** 79; *Paraboea caerulea* Ridl., **FMP2** 529; shrub to 1 m tall; lowland and hill forest; P. Tioman, Jh; endemic.

105.8.27 **Didymocarpus doryphyllus** B.L. Burtt, **B42** 99; *Didymocarpus lanceolatus* (*non* C.B. Clarke) Ridl., **FMP2** 520; woody-stemmed 'herb'; montane forests; Ph; endemic.

105.8.28 **Didymocarpus ericiflorus** Ridl., **K30** 51, **K36** 173; *Codonoboea ericiflora* (Ridl.) Ridl., **FMP2** 533; shrublet to 30 cm tall; hill forest at about 1000 m; only known from Gg Tahan, Ph; endemic.

105.8.29 **Didymocarpus falcatus** Kiew, **K29** 218; woody-stemmed herb to 1 m tall; on cliffs and boulders in hill forest; Gg Janing, Jh; endemic.

105.8.30 **Didymocarpus fasciatus** Ridl., **FMP2** 520, **K30** 52; woody-stemmed 'herb' to 30 cm tall; rocky montane forest; Kd, Ph, NS; endemic.

105.8.31 **Didymocarpus flavescens** Ridl., **FMP2** 511; herb to 30 cm tall; montane forest; Sl; endemic.

105.8.32 **Didymocarpus flavobrunneus** Ridl., **FMP2** 515 incl. var. *montanus* Ridl., **K29** 52; woody-stemmed 'herb' to 30 cm tall; lowland and hill forest near rivers; only known from Gg Tahan, Ph; endemic.

105.8.33 **Didymocarpus flavus** Ridl., **FMP2** 510; *Staurogyne serrulata* C.B. Clarke, **FMP2** 563; shrub to 1 m tall; hill and montane forest; Pk, Sl.

105.8.34 **Didymocarpus floribundus** (M.R. Hend.) B.L. Burtt, **B45** 44; *Paraboea floribunda* M.R. Hend., **H35** 117; herb to 10 cm tall; Bt Kajang, Tg; endemic.

105.8.35 **Didymocarpus geitleri** A. Weber, **W03** 95; woody-stemmed 'herb' to 15 cm tall; on banks in lowland forest; only known from the Kuantan district, Ph; endemic.

105.8.36 **Didymocarpus glabratus** Ridl., **FMP2** 513; herb to 40 cm tall; montane forest; Gg Panti, Jh; endemic.

105.8.37 **Didymocarpus heterophyllus** Ridl., **FMP2** 522, **K30** 53; short-stemmed herb with woody rootstock; by streams in the lowlands and hills; Ph, Jh; endemic.

105.8.38 **Didymocarpus hirsutus** Ridl., **FMP2** 520; woody-stemmed 'herb' to 40 cm tall; hill forest; Pk; endemic.

105.8.39 **Didymocarpus hirtus** Ridl., **FMP2** 512; herb to 50 cm tall; montane forest; Semangkok Pass, Sl; endemic.

105.8.40a **Didymocarpus hispidus** Ridl. var. **hispidus**, **FMP2** 511; *Staurogyne macrantha* C.B. Clarke, **FMP2** 563; herb to 30 cm tall; montane forest; Pk.

105.8.40b **Didymocarpus hispidus** Ridl. var. **selangorensis** Ridl., **FMP2** 512; herb; montane forest; Sl.

105.8.41 **Didymocarpus holttumii** (M.R. Hend.) B.L. Burtt, **B45** 44; *Paraboea holttumii* M.R. Hend., **H31** 54; stiff erect herb to 30 cm tall; hill forest at 900 m; Gg Belumut, Jh; endemic.

105.8.42 **Didymocarpus inaequalis** Ridl., **FMP2** 510; woody-stemmed 'herb' to 20 cm tall; Gg Chinchang, P. Langkawi.

105.8.43 **Didymocarpus lancifolius** M.R. Hend., **H31** 52; creeping herb to 13 cm tall; gorge of the Sg Tras near Raub, Ph; endemic.

105.8.44 **Didymocarpus leiophyllus** Kiew, **K39** 28; woody-stemmed 'herb' to 20 cm tall; earthbanks in lowland forest; Ulu Sg Setai, Tg; endemic.

105.8.45 **Didymocarpus leucanthus** Kiew, **K39** 31; prostrate shrub to 1 m tall; lowland forest; Ulu Ampang, Sl; endemic.

105.8.46 **Didymocarpus leucocodon** (Ridl.) Kiew, **K30** 53, **K36** 175; *Codonoboea leucocodon* (Ridl.) Ridl., **FMP2** 533; woody-stemmed 'herb'; mossy montane ridges at 1200–1700 m; Gg Tahan, Ph; endemic.

105.8.47 **Didymocarpus lilacinus** Ridl., **K30** 54, **K36** 174; *Codonoboea lilacina* (Ridl.) Ridl., **FMP2** 534; clumping shrublet; on earth banks in lowland forest; only known from Gg Tahan area, Ph; endemic.

105.8.48 **Didymocarpus lithophilus** Kiew, **K30** 54, **K39** 37; *Didymocarpus kompsoboea auct. non* C.B. Clarke, **FMP2** 518; woody-stemmed 'herb' to 20 cm tall; lower montane forest; Kd, Kl, Tg, Pk, Ph, Sl; endemic.

105.8.49 **Didymocarpus longipes** C.B. Clarke, **FMP2** 521; woody-stemmed 'herb' to 10 cm tall; on rocks on mountains; Gg Ledang, Ml; endemic.

105.8.50 **Didymocarpus malayanus** Hook.*f.*, **FMP2** 514; short-stemmed herb; hill and montane forest; Pk, Ph, Sl, Ml; endemic.

105.8.51 **Didymocarpus marginatus** C.B. Clarke, **FMP2** 516; creeping herb; on rocks on mountains; lower slopes of Gg Ledang, Ml; endemic.

105.8.52 **Didymocarpus miniatus** Kiew, **K43** 40; woody-stemmed 'herb' to 1 m tall; lowland forest on sandstone; Bt Bauk and Bt Chabang, Tg; endemic.

105.8.53 **Didymocarpus modestus** Ridl., **FMP2** 513; herb about 25 cm tall; montane forest; Gg Kerbau, Pk; endemic.

105.8.54 **Didymocarpus nitidus** Kiew & A. Weber, **K48** 4; woody-stemmed 'herb' 40–70 cm tall; steep slopes in montane forest at 1300–1400 m; only known from Gg Bunga Buah, Sl; endemic.

105.8.55 **Didymocarpus niveus** (Kiew) Kiew, **K36** 174; *Codonoboea nivea* Kiew, **K29** 210; herb to 1 m tall; on banks in lowland forest; Ph, Jh; endemic.

105.8.56 **Didymocarpus parviflorus** Ridl., **FMP2** 510; erect herb to 30 cm tall; montane forest; Pk, NS; endemic.

105.8.57 **Didymocarpus pectinatus** C.B. Clarke *ex* Oliv., **FMP2** 521; shrubby plant to 20 cm tall; lowland forest; Pk, Sl; endemic.

105.8.58 **Didymocarpus platypus** C.B. Clarke, **FMP2** 517, **K29** 56; woody-stemmed 'herb'; lowland and hill forest to 1000 m; widespread.

105.8.59 **Didymocarpus polyanthoides** Kiew, **K30** 56; woody-stemmed 'herb' to 85 cm tall; steep slopes near river in lowland forest; only known from Sg Teku, Gg Tahan, Ph; endemic.

105.8.60 **Didymocarpus primulinus** Ridl., **FMP2** 522; herb to 10 cm tall; montane forest; Klang Gates, Sl; endemic.

105.8.61 **Didymocarpus pulchellus** Ridl., **FMP2** 516; herb to 20 cm tall; forest; Kuala Lipis, Ph; endemic.

105.8.62 **Didymocarpus pumilus** Ridl., **FMP2** 523; 'herb' with short woody stem; lower montane forest; Semangkok Pass, Sl; endemic.

105.8.63 **Didymocarpus puncticulatus** Ridl., **FMP2** 522, **K29** 220; *Didymocarpus perdita* Ridl., **FMP2** 522; nearly stemless herb; lowland forest; Tg, Ph, Jh, Sp; endemic.

105.8.64 **Didymocarpus purpureus** Ridl., **FMP2** 509; herb to 50 cm tall; hill forest; Gg Chinchang, P. Langkawi; endemic.

105.8.65 **Didymocarpus pyroliflorus** Ridl., **K29** 57; *Paraboea pyroliflora* (Ridl.) Ridl., **FMP2** 529; woody-stemmed 'herb' to 15 cm tall; hill forest near streams; Ph, Jh; endemic.

105.8.66 **Didymocarpus quinquevulnerus** Ridl., **FMP2** 518, **K30** 58; woody-stemmed 'herb' to 30 cm tall; lowland and hill forest to 1000 m; Kl, Ph, Sl, Ml, Jh; endemic.

105.8.67 **Didymocarpus ramosus** Ridl., **FMP2** 511; herb to 30 cm tall; montane forest; Gg Batu Puteh, Pk; endemic.

105.8.68 **Didymocarpus reptans** Jack, **FMP2** 515; creeping herb; hill forest; scattered.

Ridley [**FMP2** 516] recognized three varieties of this species (*monticola* Ridl., *violascens* Ridl. and *modestus* Ridl.) in addition to the typical form.

105.8.69 **Didymocarpus ridleyanus** B.L. Burtt, **B42** 99, **K30** 59; *Didymocarpus grandiflorus* [*non* (Wall.) Dietr. *ex* Steud.] Ridl., **FMP2** 523; woody-stemmed 'herb'; lower montane forest; only known from Gg Tahan, Ph; endemic.

105.8.70 **Didymocarpus robinsonii** Ridl., **FMP2** 513, **K30** 59; tiny shrub about 30 cm tall; upper montane forest; only known from Gg Tahan, Ph; endemic.

105.8.71 **Didymocarpus robustus** Ridl., **FMP2** 508, **W06** 308; shrub to 1 m tall; montane forest; only known from type Gg Kerbau, Pk; endemic.

105.8.72 **Didymocarpus rubiginosus** (Ridl.) B.L. Burtt, **B45** 44, **K30** 59; *Paraboea rubiginosa* Ridl., **FMP2** 530; herb with woody rootstock; cracks in dry cliffs at 1300–2000 m; only known from Gg Tahan; endemic.

105.8.73 **Didymocarpus rugosus** Ridl., **FMP2** 517; short woody-stemmed 'herb'; lowland forest; Kl, Pk.

105.8.74 **Didymocarpus salicinoides** Kiew, **K39** 35; *Paraboea salicina* (Ridl.) Ridl. var. *major* Ridl., **FMP5** 325; wiry-stemmed herb; lowland forest; Kl, Tg; endemic.

105.8.75 **Didymocarpus salicinus** Ridl., **K30** 60; *Paraboea filicifolia* (Ridl.) Ridl., **FMP2** 530; *Paraboea salicina* (Ridl.) Ridl., **FMP2** 530; woody-rooted herbaceous rheophyte; on rocks in streams to 1700 m; only known from Gg Tahan, Ph; endemic.

105.8.76 **Didymocarpus scortechinii** (Ridl.) B.L. Burtt, **B45** 44; *Paraboea scortechinii* Ridl., **FMP2** 529; herb; Pk; poorly known; endemic.

105.8.77 **Didymocarpus serratifolius** Ridl., **FMP2** 521; woody-stemmed 'herb' to 20 cm tall; on wet rocks in hill forest; Taiping Hills, Pk; endemic.

105.8.78 **Didymocarpus soldanella** Ridl., **FMP2** 523; short-stemmed herb; montane forest; Gg Kerbau, Pk; endemic.

105.8.79 **Didymocarpus stoloniferus** Kiew, **K39** 36; stoloniferous herb; on rocks in upper montane forest at 1800 m; Gg Ulu Kali, Ph; endemic.

105.8.80a **Didymocarpus sulphureus** Ridl. var. **breviflorus** Ridl., **FMP2** 509, **W06** 307; creeping and climbing shrub; montane forest; Pk, Sl; endemic.

105.8.80b **Didymocarpus sulphureus** Ridl. var. **grandiflorus** Ridl., **FMP2** 509, **W06** 307; creeping and climbing shrub; montane forest; variety only known from Gg Kerbau, Pk; endemic.

105.8.80c **Didymocarpus sulphureus** Ridl. var. **sulphureus**, **FMP2** 509, **W06** 305; creeping and climbing shrub; montane forest; Pk, Ph; endemic.

105.8.81 **Didymocarpus tahanicus** B.L. Burtt, **B44** 46, **K30** 61; *Paraboea grandifolia* (Ridl.) Ridl., **FMP2** 531; stemless or short-woody-stemmed plant; lower montane forest; Gg Padang, Tg; Gg Tahan, Ph; endemic.

105.8.82 **Didymocarpus tiumanicus** (Ridl.) B.L. Burtt, **B45** 44; *Paraboea tiumanica* Ridl., **FMP2** 530; herb to 10 cm tall; lowland forest; P. Tioman, P. Tinggi and P. Pemanggil, Jh; endemic.

105.8.83 **Didymocarpus urticifolius** Ridl., **FMP2** 511; herb to 15 cm tall; hill and montane forest; Pk; endemic.

105.8.84 **Didymocarpus venustus** Ridl., **FMP2** 514, **K44** 206; *Didymocarpus pubiflorus* (Ridl.) B.L. Burtt, **B45** 44; shrub to 100 cm tall; montane forest at 1000–2000 m; Pk, Ph, Sl; endemic.

105.8.85 **Didymocarpus violaceus** Ridl., **FMP2** 509; 'herb' with short woody stem; on damp rocks in the mountains; Pk; endemic.

105.8.86 **Didymocarpus viscidus** Ridl., **FMP2** 512; herb to 20 cm tall; Gg Keledang, Pk; endemic.

105.8.87 **Didymocarpus winkleri** Ridl., **FMP2** 515; herb with short stout stem; montane forest; Gg Angsi, NS; endemic.

105.8.88 **Didymocarpus yongii** Kiew, **K30** 62; cabbagey herb with woody rootstock; steep slopes near rivers in lowland forest; only known from the base of Gg Tahan, Ph; endemic.

105.8.89 **Didymocarpus sp.**,**W31** 202; *Chirita uniflora* Ridl., **FMP2** 525; herb to 35 cm tall; montane forest; Sl; endemic.

105.9.1 **Epithema membranaceum** (King) Kiew, **K27** 36 '*membranacea*'; *Argostemma membranaceum* King, **FMP2** 24; fleshy herb to 15 cm tall; on shaded rocks including limestone; Pn, Pk, Ph; endemic.

105.9.2 **Epithema saxatile** Blume, **FMP2** 539; soft succulent herb to 30 cm tall; usually on limestone; quite widespread.

105.10.1 **Loxocarpus angustifolius** Ridl., **FMP2** 526; small stemless herb; on wet rocks in lowland forest; only known from Ph; endemic.

105.10.2 **Loxocarpus caeruleus** Ridl., **FMP2** 527; stemless herb; on rocks in the mountains; Kd, Pk, Ph, Sl; endemic.

105.10.3 **Loxocarpus incanus** R.Br., **FMP2** 527; stemless herb; on rocks in hill and montane forest; Kl, Pn, Pk, Sl, Jh.

105.10.4 **Loxocarpus holttumii** M.R. Hend., **H33** 412; rosette herb to 15 cm tall; on rocks at 500 m; Gg Panti, Jh; endemic.

105.10.5 **Loxocarpus minimus** Ridl., **FMP2** 527; stemless herb; on rocks in hill forest; Bt Tangga, NS; endemic.

105.10.6 **Loxocarpus papillosus** M.R. Hend., **H31** 53; stemless rosette herb to 7 cm tall; Gg Angsi, NS; endemic.

105.10.7 **Loxocarpus semitortus** (C.B. Clarke) Ridl., **FMP2** 526; stemless herb on rocks in mountain streams; only known from Gg Ledang, Ml/Jh; endemic.

105.10.8 **Loxocarpus tunkui** Kiew, **K29** 221; rosette-forming herb; on wet rocks in lowland forests; Ph, Jh.

105.11.1 **Loxonia hirsuta** Jack, **B45** 49, **W01** 204; *Loxonia acuminata* R.Br., **FMP2** 541; herb to 60 cm tall; hill forest; Ph, Jh.

105.12.1 **Micraeschynanthus dischidioides** Ridl., **FMP5** 325; slender epiphyte; montane forest; Gg Tahan, Ph; endemic.

105.13.1 **Monophyllaea elongata** B.L. Burtt, **B48** 48; herb; on limestone cliffs; Pk; endemic.

105.13.2 **Monophyllaea glabra** Ridl., **FMP2** 540, **B48** 38; succulent herb to 30 cm tall with one big leaf; on limestone; P. Langkawi.

105.13.3 **Monophyllaea hirticalyx** Franch., **B48** 39; *Monophyllaea patens* Ridl., **FMP2** 540; succulent herb to 20 cm tall with one big leaf; on limestone; Kl, Pk, Ph, Sl; endemic.

105.13.4a **Monophyllaea horsfieldii** R.Br. var. **hendersonii** B.L. Burtt, **B48** 45; one-leaved herb to 25 cm tall; limestone cliffs; Bt Cheras, Pk; endemic variety.

105.13.4b **Monophyllaea horsfieldii** R.Br. var. **horsfieldii**, **FMP2** 540, **B48** 43; succulent herb to 40 cm tall with one big leaf; on limestone; Ps, Kl, Pk, Sl.

105.14.1 **Orchadocarpa lilacina** Ridl., **FMP2** 538; herb with woody rootstock; montane forest; Pk, Sl; endemic genus.

105.15.1 **Ornithoboea flexuosa** (Ridl.) B.L. Burtt, **B41** 297; *Lepadanthus flexuosus* Ridl., **FMP2** 538; herb to 45 cm tall; Kd.

105.16.1 **Paraboea acutifolia** (Ridl.) B.L. Burtt, **B49** 423; *Boea acutifolia* Ridl., **FMP2** 536; shrublet to 30 cm tall; on limestone; Ps, P. Langkawi.

105.16.2 **Paraboea bakeri** M.R. Hend., **H35** 115, **B49** 424; stemless herb; on limestone; known only from type, Bt Sagu, Ph; endemic.

105.16.3 **Paraboea bettiana** M.R. Hend., **H35** 116, **B49** 424; shrublet to 45 cm tall; on limestone in lowland forest; known only from Bt Cheras, Ph; endemic.

105.16.4 **Paraboea bintangensis** B.L. Burtt, **B49** 424; herb; on limestone rocks in forest; only known from Bt Bintang, Ps; endemic.

105.16.5 **Paraboea brachycarpa** (Ridl.) B.L. Burtt, **B49** 424; *Boea brachycarpa* Ridl., **R15** 259; shrublet to 20 cm tall; on limestone; Kl, Ph; endemic.

105.16.6 **Paraboea caerulescens** (Ridl.) B.L. Burtt, **B49** 425; *Boea caerulescens* Ridl., **FMP2** 535; shrub to 1 m tall; on limestone hills; Kl, Pk, Ph; endemic.

105.16.7a **Paraboea capitata** Ridl. var. **capitata**, **FMP2** 531, **B49** 426; *Paraboea curtisii* Ridl., **FMP2** 532; *Paraboea polita* Ridl., **FMP2** 532; stemless herb with stout rootstock; on limestone hills; Pk, Ph, Kl; endemic.

105.16.7b **Paraboea capitata** Ridl. var. **oblongifolia** Ridl., **FMP2** 531, **B49** 426; stemless herb with stout rootstock; on limestone hills; Pk; endemic.

105.16.8 **Paraboea divaricata** (Ridl.) B.L. Burtt, **B49** 428; *Boea divaricata* Ridl., **FMP2** 535; woody-stemmed 'herb'; on limestone; only known from P. Langkawi; endemic.

105.16.9 **Paraboea elegans** (Ridl.) B.L. Burtt, **B49** 428; *Paraboea obovata* Ridl., **FMP2** 533; *Boea elegans* Ridl., **FMP2** 536; shortly woody-stemmed 'herb'; on quartzitic rock (only Malayan calcifuge *Paraboea*); P. Langkawi, Kd, Sl; endemic.

105.16.10 **Paraboea ferruginea** (Ridl.) Ridl., **FMP2** 531; very short-stemmed herb; on damp limestone; only known from P. Langkawi; endemic.

105.16.11 **Paraboea lanata** (Ridl.) B.L. Burtt, **B49** 431; *Boea lanata* Ridl., **FMP2** 535; stout woody-stemmed 'herb' to 10 cm tall; on maritime limestone rocks; only known from P. Langkawi; endemic.

105.16.12 **Paraboea laxa** Ridl., **FMP2** 532, **B49** 431; shortly woody-stemmed 'herb'; on limestone; only known from P. Langkawi; endemic.

105.16.13 **Paraboea nervosissima** Z. Xu & B.L. Burtt, **X02** 9; shrub to 1 m tall; limestone hills; Kl, Ph; endemic.

105.16.14 **Paraboea paniculata** (Ridl.) B.L. Burtt, **B49** 434; *Boea paniculata* Ridl., **FMP2** 534; woody-stemmed herb to 20 cm tall; on limestone; Pk, Sl.

105.16.15 **Paraboea parviflora** (Ridl.) B.L. Burtt, **B49** 435; *Boea parviflora* Ridl., **FMP2** 536; herb to 15 cm tall; limestone hills; Pk; endemic.

105.16.16 **Paraboea regularis** (Ridl.) Ridl., **FMP2** 531, **B49** 435; short woody-stemmed 'herb'; on limestone; only known from type, P. Langkawi; endemic.

105.16.17 **Paraboea suffruticosa** (Ridl.) B.L. Burtt, **B49** 439; *Boea suffruticosa* Ridl., **FMP2** 536; shrublet 30–60 cm tall; on limestone; P. Langkawi (and nearby Thai islands).

105.16.18 **Paraboea treubii** (H.O. Forbes) B.L. Burtt, **B49** 440; *Boea treubii* H.O. Forbes, **C14** 149; sub-shrub; on limestone; Kl, Ph.

105.16.19 **Paraboea verticillata** (Ridl.) B.L. Burtt, **B49** 440; *Boea verticillata* Ridl., **FMP2** 535; herb with woody rootstock; on limestone; Sl; endemic.

105.16.20 **Paraboea vulpina** Ridl., **FMP2** 532, **B49** 441; herb with woody rootstock; on limestone; Pk; endemic.

Paraboea lancifolia (Ridl.) B.L. Burtt (*Boea lancifolia* Ridl., **FMP2** 536) has not been recorded from Malaya, only southern Thailand.

105.17.1 **Rhynchoglossum obliquum** Blume, **FMP2** 539; succulent herb to 50 cm tall; hill forests, once from limestone; Pk.

105.18.1 **Rhynchotechum parviflorum** Blume, **FMP2** 542; shrub about 1 m tall; hill forest; Kl, Pn, Pk, Ph.

105.19.1 **Stauranthera grandiflora** Benth., **FMP2** 541, **B50** 131; succulent herb about 15 cm tall; on rocks, including limestone; Pn, Pk, Sl.

105.19.2 **Stauranthera umbrosa** (Griff.) C.B. Clarke, **FMP2** 541; succulent herb to 15 cm tall; on shaded rocks including limestone; Pk, Ph, Sl, Jh.

105.20.1 **Trisepalum speciosum** (Ridl.) B.L. Burtt, **B49** 445; *Dichiloboea speciosa* (Ridl.) Stapf, **FMP2** 537; sub-shrub to 60 cm tall; on limestone; Ps, P. Langkawi.

106. GOODENIACEAE

106.1.1 **Scaevola taccada** (Gaertn.) Roxb., **T08** 391; *Scaevola koenigii* Vahl, **FMP2** 199; *Scaevola sericea* Vahl, **FMI5** 339, **FMI9** 566; large succulent shrub; sandy shores; all coasts.

107. GUTTIFERAE

107.1.1 **Calophyllum alboramulum** P.F. Stevens, **S37** 204; *Calophyllum sp. 23*, **TFM2** 195; tree to 33 m tall; lowland forest; Jh.

107.1.2 **Calophyllum aureobrunnescens** M.R. Hend. & Wyatt-Sm., **TFM2** 172, **S37** 636; small tree to 5 m tall; montane forest at 1500–1800 m; Ph; endemic.

107.1.3 **Calophyllum aureum** Symington *ex* M.R. Hend. & Wyatt-Sm., **TFM2** 171, **S37** 637; shrub or small tree to 15 m tall; upper montane forest at 1500–2100 m; Pk, Ph, Sl; endemic.

107.1.4 **Calophyllum biflorum** M.R. Hend. & Wyatt-Sm., **TFM2** 176, **S37** 472; tree to 36 m tall; lowland forest; Jh, Sp.

107.1.5a **Calophyllum calaba** L. var. **bracteatum** (Wight) P.F. Stevens, **S37** 261; *Calophyllum curtisii* Ridl., **FMP1** 185, **TFM2** 177; tree to 40 m tall; lowland and hill forest; throughout.

107.1.5b **Calophyllum calaba** L. var. **cuneatum** (Symington *ex* M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 267; *Calophyllum cuneatum* Symington *ex* M.R. Hend. & Wyatt-Sm., **TFM2** 177; tree to 30 m tall; lower montane forest at 1200–1500 m; Ph.

107.1.6 **Calophyllum canum** Hook.*f.*, **FMP1** 185, **TFM2** 176, **S37** 371; tree to 36 m tall; lowland forest mostly; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

107.1.7 **Calophyllum coriaceum** Symington *ex* M.R. Hend. & Wyatt-Sm., **TFM2** 177, **S37** 362; tree to 30 m tall; lower montane forest at 1200–1500 m; Ph, Sl; endemic.

107.1.8 **Calophyllum costulatum** M.R. Hend. & Wyatt-Sm., **FMP2** 173, **S37** 470; tree to 30 m tall; lowland forest; Pk, Jh, Sp; endemic.

107.1.9 **Calophyllum depressinervosum** M.R. Hend. & Wyatt-Sm., **TFM2** 179, **S37** 389; tree to 36 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh.

107.1.10 **Calophyllum dioscurii** P.F. Stevens, **S37** 530; *Calophyllum sp. 45*, **TFM2** 195; tree to 33 m tall; lowland forest; Kd, Pk, Ph, NS, Ml, Jh.

107.1.11 **Calophyllum dispar** P.F. Stevens, **S37** 524; tree to 18 m tall; lowland swamp forest; Tg, Ph, Sp.

107.1.12 **Calophyllum enervosum** M.R. Hend. & Wyatt-Sm., **TFM2** 180, **S37** 423; tree to 33 m tall; lowland forest; Jh.

107.1.13a **Calophyllum ferrugineum** Ridl. var. **ferrugineum**, **S37** 459; *Calophyllum ferrugineum* Ridl., **FMP1** 184, **TFM2** 180; *Calophyllum retusum* Wall. *ex* Choisy, **FMP1** 184; tree to 22 m tall; lowland forest; Jh, Sp.

107.1.13b **Calophyllum ferrugineum** Ridl. var. **oblongifolium** (T. Anderson) P.F. Stevens, **S37** 460; *Calophyllum oblongifolium* (T. Anderson) Ridl., **FMP1** 184; *Calophyllum neriifolium* Ridl., **FMP1** 188; *Calophyllum marginatum* Wall., **FMP1** 188; *Calophyllum ferrugineum* Ridl. var. *neriifolium* (Ridl.) M.R. Hend. & Wyatt-Sm., **TFM2** 181; tree to 30 m tall; lowland and hill forest to 760 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic variety.

107.1.14 **Calophyllum flavoramulum** M.R. Hend. & Wyatt-Sm., **TFM2** 181, **S37** 421; tree to 38 m tall; lowland forest; Tg, Ph, Jh.

107.1.15 **Calophyllum fraseri** M.R. Hend. & Wyatt-Sm., **TFM2** 182 in part, **S37** 417; *Calophyllum symingtonianum* M.R. Hend. & Wyatt-Sm., **TFM2** 192 in part; tree to 36 m tall; hill and montane forest at 700–1300 m; Kd, Kl, Tg, Ph; endemic.

107.1.16 **Calophyllum gracillimum** M.R. Hend. & Wyatt-Sm., **TFM2** 172, **S37** 624; tree to 15 m tall; lowland and hill forest to 1000 m; Tg, Ph, Sl; endemic.

107.1.17 **Calophyllum inophyllum** L., **FMP1** 186, **TFM2** 186, **S37** 324; tree to 25 m tall; rocky and sandy shores; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

107.1.18 **Calophyllum lanigerum** Miq. var. **austrocoriaceum** (Whitmore) P.F. Stevens, **S37** 358; *Calophyllum austrocoriaceum* Whitmore, **TFM2** 174; tree to 21 m tall; lowland and hill forest; Jh, Sp.

107.1.19 **Calophyllum macrocarpum** Hook.*f.*, **FMP1** 187, **TFM2** 187, **S37** 452; tree to 45 m tall; lowland and hill forest to 800 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

107.1.20 **Calophyllum molle** King, **FMP1** 185, **TFM2** 188, **S37** 641; tree to 30 m tall; lowland and hill forest to 700 m; Kd, Pn, Tg, Pk, Ph, Sl, Jh.

107.1.21 **Calophyllum nodosum** Vesque, **TFM2** 171, **S37** 385; *Calophyllum parvifolium* (*non* Choisy) Vesque, **FMP1** 182; shrub or tree to 25 m tall; upper montane forest; Jh.

107.1.22 **Calophyllum pisiferum** Planch. & Triana, **FMP1** 184, **TFM2** 172, **S37** 518; *Calophyllum rupicola* Ridl. var. *elata* Whitmore, **TFM2** 168 in part; shrub or small tree; rheophyte or sandy places; Ml, Jh.

107.1.23 **Calophyllum pulcherrimum** Wall. *ex* Choisy, **FMP1** 182 in part, **TFM2** 188, **S37** 395; tree to 23 m tall; lowland forest; Ph, NS, Ml, Jh, Sp.

107.1.24 **Calophyllum rigidum** Miq., **S37** 294; *Calophyllum kunstleri* King, **FMP1** 182, **TFM2** 187; tree to 25 m tall; lowland forest and swamps; Pk, Ph, NS, Ml, Jh, Sp.

107.1.25 **Calophyllum rotundifolium** Ridl., **FMP1** 188, **TFM2** 168, **S37** 634; tree about 9 m tall; upper montane forest at 1500–1800 m; Gg Ulu Kali, Ph; Gg Mengkuang Lebah, Sl; endemic.

107.1.26 **Calophyllum rubiginosum** M.R. Hend. & Wyatt-Sm., **TFM2** 189, **S37** 638; *Calophyllum wallichianum auct. non* Planch. & Triana, **FMP1** 187 in part; tree to 39 m tall; lowland forest; Sl, NS, Ml, Jh, Sp.

107.1.27 **Calophyllum rufigemmatum** M.R. Hend. & Wyatt-Sm. *ex* P.F. Stevens, **S37** 350; *Calophyllum wallichianum auct. non* Planch. & Triana, **TFM2** 193 in part; tree to 48 m tall; lowland forest; Tg, Ph, Jh, Sp.

107.1.28 **Calophyllum rupicola** Ridl., **FMP1** 182, **TFM2** 168 incl. most of var. *elatum* Whitmore, **S37** 515; shrub or small tree to 6 m tall; usually rheophytic; Kl, Tg, Ph, Jh.

107.1.29 **Calophyllum sclerophyllum** Vesque, **TFM2** 189, **S37** 447; stilt-rooted tree to 36 m tall; swamp forest; Kd, Kl, Tg, Pk, Ph, Jh.

107.1.30 **Calophyllum scriblitifolium** M.R. Hend. & Wyatt-Sm., **TFM2** 192, **S37** 368; tree to 44 m tall; peat swamp forest; Pk, Sl, Jh.

107.1.31 **Calophyllum soulattri** Burm.*f.*, **TFM2** 192, **S37** 277; *Calophyllum spectabile auct. non* Willd., **FMP1** 185 in part; tree to 26 m tall; mostly lowland forest; Ps, Kd, Pn, Kl, Ph, NS, P. Jarak, Ml, Jh.

107.1.32 **Calophyllum stipitatum** P.F. Stevens, **S37** 408; tree to 18 m tall; lowland forest; Sungei Aur, Ph; ?endemic.

107.1.33 **Calophyllum subhorizontale** M.R. Hend. & Wyatt-Sm., **TFM2** 170, **S37** 664; tree to 8 m tall; lowland forest; Ph, Sl, NS; endemic.

107.1.34 **Calophyllum subsessile** King, **FMP1** 187, **S37** 489; *Calophyllum javanicum auct. non* Miq., **TFM2** 187 in part; tree to 24 m tall; swampy lowland forest; Pk; endemic.

107.1.35 **Calophyllum sundaicum** P.F. Stevens, **S37** 467; *Calophyllum retusum auct. non* Wall. *ex* Choisy, **TFM2** 188; tree to 28 m tall; lowland swamp forest; Ph, Sl, Jh, Sp.

107.1.36 **Calophyllum symingtonianum** M.R. Hend. & Wyatt-Sm., **TFM2** 192 in part, **S37** 229; tree to 39 m tall; lowland to lower montane forest at 1200 m; P. Langkawi, Kd, Kl, Ph.

107.1.37a **Calophyllum tetrapterum** Miq. var. **blumutense** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 512; *Calophyllum blumutense* M.R. Hend. & Wyatt-Sm., **TFM2** 171; shrub or small tree to 12 m tall; hill and montane forest; Gg Belumut and Gg Panti, Jh; endemic variety.

107.1.37b **Calophyllum tetrapterum** Miq. var. **obovale** (Miq.) P.F. Stevens, **S37** 510; *Calophyllum griffithii* T. Anderson, **FMP1** 187 in part, **TFM2** 168; tree to 20 m tall; lowland forest; Pk, Ml, ?Jh.

107.1.37c **Calophyllum tetrapterum** Miq. var. **tetrapterum**, **S37** 506; *Calophyllum floribundum* Hook.*f.*, **FMP1** 184, **TFM2** 181; *Calophyllum prainianum* King, **FMP1** 183; *Calophyllum venustum* King, **FMP1** 186; *Calophyllum foetidum* Ridl., **FMP1** 186 in part; *Calophyllum lanceola* Ridl., **FMP1** 182; *Calophyllum pulcherrimum auct. non* Wall. *ex* Choisy, **FMP1** 182 in part; *Calophyllum rupicola* Ridl. var. *elatum* Whitmore, **TFM2** 169 in part; tree to 30 m tall; P. Langkawi, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

107.1.38a **Calophyllum teysmannii** Miq. var. **inophylloide** (King) P.F. Stevens, **S37** 436; *Calophyllum inophylloide* King, **FMP1** in part, **TFM2** 183; *Calophyllum fraseri auct. non* M.R. Hend. & Wyatt-Sm., **TFM2** 182 in part; tree to 40 m tall; lowland to lower montane forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Jh.

107.1.38b **Calophyllum teysmannii** Miq. var. **teysmannii**, **S37** 432; *Calophyllum inophylloide auct. non* King, **FMP1** 186 in part; *Calophyllum inophylloide* King var. *singapurense* M.R. Hend. & Wyatt-Sm., **TFM2** 186; *Calophyllum sp. 44*, **TFM2** 173; tree to 36 m tall; lowland to lower montane forest at 1200 m; Kl, Tg, Ph, Jh, Sp.

107.1.39a **Calophyllum venulosum** Miq. var. **tenuivenium** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 481; *Calophyllum tenuivenium* M.R. Hend. & Wyatt-Sm., **TFM2** 193; tree to 20 m tall; lowland forest; Jh; endemic variety.

107.1.39b **Calophyllum venulosum** Miq. var. **venulosum**, **S37** 481; *Calophyllum javanicum* Miq., **TFM2** 187 in part; tree to 45 m tall; lowland forest; Pk, Ph, Jh.

107.1.40a **Calophyllum wallichianum** Planch. & Triana var. **incrassatum** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 345; *Calophyllum incrassatum* M.R. Hend. & Wyatt-Sm., **TFM2** 183; tree to 36 m tall; lowland forest; Kl, Tg, Ph, Sl, Ml, Jh, Sp.

107.1.40b **Calophyllum wallichianum** Planch. & Triana var. **tahanense** (M.R. Hend. & Wyatt-Sm.) P.F. Stevens, **S37** 346; *Calophyllum tahanense* M.R. Hend. & Wyatt-Sm., **TFM2** 168; tree to 20 m tall; hill and lower montane forest; Kl, Ph, NS; endemic variety.

107.1.40c **Calophyllum wallichianum** Planch. & Triana var. **wallichianum**, **S37** 343; *Calophyllum spectabile auct. non* Willd., **FMP1** 185 in part; *Calophyllum wallichianum* Planch. & Triana, **TFM2** 193 in part; tree to 30 m tall; lowland and hill forest; Kd, Pn, Kl, Pk, NS; endemic variety.

107.1.41 **Calophyllum sp. 73**, **S37** 422; tree about 20 m tall; lowland forest; once from Bt Bauk Forest Reserve, Tg; ?endemic.

107.1.42 **Calophyllum sp. 151**, **S37** 627; tree to 21 m tall; lowland forest; Jh, Sp; endemic.

107.2.1 **Cratoxylum arborescens** (Vahl) Blume, **FMP1** 153 incl. var. *miquelii* King, **TFM2** 249; tree to 42 m tall; common in lowland swamp forest, also in the hills; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

107.2.2 **Cratoxylum cochinchinense** (Lour.) Blume, **TFM2** 251; *Cratoxylum polyanthum* Korth., **FMP1** 152; tree to 33 m tall; lowland forest to 500 m; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Sp.

107.2.3 **Cratoxylum formosum** (Jack) Dyer, **FMP1** 153, **TFM2** 251; tree to 45 m tall; lowland forest to 600 m; throughout.

107.2.4 **Cratoxylum glaucum** Korth., **TFM2** 249; *Cratoxylum microphyllum* Miq., **FMP1** 153; montane and lowland heath forest; Jh; endemic.

107.2.5 **Cratoxylum maingayi** Dyer, **FMP1** 154, **TFM2** 251; tree to 31 m tall; lowland forest, also on limestone; Kd, Pn, Kl, Pk, Ph, Jh.

107.2.6 **Cratoxylum sumatranum** (Jack) Blume, **TFM2** 251; tree to 12 m tall; lowland forest; once each from Tg and Sl.

107.3.1 **Garcinia atroviridis** Griff. *ex* T. Anderson, **FMP1** 173, **TFM2** 206; tree to 27 m tall; lowland and hill forest to 600 m, sometimes cultivated; throughout.

107.3.2a **Garcinia bancana** (Miq.) Miq. var. **bancana**, **FMP1** 174, **TFM2** 206; tree to 33 m tall; lowland forest; throughout.

107.3.2b **Garcinia bancana** (Miq.) Miq. var. **curtisii** (Ridl.) Whitmore, **TFM2** 206; *Garcinia curtisii* Ridl., **FMP1** 175; tree; lowland forest; Pn, Jh, Sp; endemic variety.

107.3.3 **Garcinia burkillii** Whitmore, **TFM2** 207; *Garcinia uniflora auct. non* King, **FMP1** 177 in part; tree to 15 m tall; lowland to lower montane forest, 420–600 m; Tg, Ph; endemic.

107.3.4a **Garcinia cantleyana** Whitmore var. **cantleyana**, **TFM2** 207; tree to 15 m tall; montane forest; Pk, Ph; endemic.

107.3.4b **Garcinia cantleyana** Whitmore var. **grandifolia** Whitmore, **TFM2** 207; small tree; montane forest; twice from Gg Ulu Kali, Ph; endemic.

107.3.5 **Garcinia cataractalis** Whitmore, **TFM2** 207; low wiry bush; rheophyte; Tg; endemic.

107.3.6 **Garcinia clusiifolia** Ridl., **FMP1** 174, **TFM2** 208; tree to 6 m tall; lower montane forest at 900 m; known only from Wray's Camp, Gg Tahan, Ph; endemic.

107.3.7 **Garcinia costata** Hemsl. *ex* King, **FMP1** 173, **TFM2** 208; small tree; lowland to lower montane forest; Kd, Pk; endemic.

107.3.8 **Garcinia cowa** Roxb., **TFM2** 208; tree occasionally to 30 m tall; lowland forest mostly; widespread.

107.3.9 **Garcinia cuspidata** King, **FMP1** 171, **TFM2** 209; tree to 27 m tall; lowland forest; Kl, Pk, Sl.

107.3.10 **Garcinia diversifolia** King, **FMP1** 171, **TFM2** 209; tree to 24 m tall; mainly lower montane forest, 300–900 m; Kl, Pk, Ph, Jh; endemic.

107.3.11 **Garcinia dumosa** King, **FMP1** 178, **TFM2** 210; shrub; lowland forest; Kl, Pk, Ph, Sl; endemic.

107.3.12 **Garcinia eugeniifolia** Wall. *ex* T. Anderson, **FMP1** 169, **TFM2** 210; tree to 15 m tall; lowland to lower montane forest; P. Langkawi, Kd, Pn, Tg, Pk, Ph, Jh, Sp.

107.3.13 **Garcinia forbesii** King, **FMP1** 175, **TFM2** 211; tree to 18 m tall; lowland to lower montane forest at 1700 m; throughout.

107.3.14 **Garcinia griffithii** T. Anderson, **FMP1** 174, **TFM2** 211; tree to 23 m tall; lowland and hill forest to 900 m; scattered throughout.

107.3.15 **Garcinia hendersoniana** Whitmore, **TFM2** 211; tree to 8 m tall; lower montane forest above 1050 m; Tg, Ph; endemic.

107.3.16 **Garcinia holttumii** Ridl., **FMP5** 290, **TFM2** 212; shrub or tree to 6 m tall; montane forest above 900 m; thrice from Gg Belumut, Jh; endemic.

107.3.17 **Garcinia hombroniana** Pierre, **FMP1** 171, **TFM2** 212; tree to 30 m tall; most frequently near the sea; all coasts.

107.3.18 **Garcinia maingayi** Hook.*f.*, **FMP1** 173, **TFM2** 214; tree to 21 m tall; lowland to lower montane forest; Kd, Tg, Pk, Ph, Jh; endemic.

107.3.19 **Garcinia malaccensis** Hook.*f.*, **FMP1** 172, **TFM2** 214; tree to 24 m tall; lowland forest to 540 m; Kl, Tg, Ph, Sl, NS, Jh.

107.3.20 **Garcinia merguensis** Wight, **FMP1** 169, **TFM2** 215; *Garcinia lanceolata* Ridl., **FMP1** 170; tree; lowland forest; P. Langkawi, Kd, Pk, Ph.

107.3.21 **Garcinia minutiflora** Ridl., **FMP1** 176, **TFM2** 216; tree to 8 m tall; mostly on limestone; Ps, P. Langkawi, Pn, Kl.

107.3.22 **Garcinia monantha** Ridl., **FMP1** 176, **TFM2** 216; small tree; montane forest; Tg, Ph; endemic.

107.3.23 **Garcinia montana** Ridl., **FMP1** 175, **TFM2** 216; tree to 5 m tall; montane forest; only known with certainty from Gg Ledang, Jh; endemic.

107.3.24 **Garcinia murdochii** Ridl., **FMP1** 175, **TFM2** 217; tree to 23 m tall; lowland forest, also on limestone; Kd, Tg, Pk, Jh.

107.3.25 **Garcinia murtonii** Whitmore, **TFM2** 217; shrub or small tree to 8 m tall; montane forest; Gg Korbu, Pk, Gg Tahan, Ph, Gg Belumut, Jh; endemic.

107.3.26a **Garcinia nervosa** Miq. var. **nervosa**, **FMP1** 179, **TFM2** 217; tree to 21 m tall; lowland forest; scattered widely.

107.3.26b **Garcinia nervosa** Miq. var. **pubescens** King, **TFM2** 218; tree; lowland forest; once from Pk; endemic variety.

107.3.27 **Garcinia nigrolineata** Planch. *ex* T. Anderson, **FMP1** 176, **TFM2** 218; *Garcinia kunstleri* King, **FMP1** 177; tree; lowland forest to 600 m; throughout.

107.3.28a **Garcinia opaca** King var. **dumosa** Whitmore, **TFM2** 219; shrub; lowland forest to 600 m; Pk, Ph, Sl, Jh; endemic.

107.3.28b **Garcinia opaca** King var. **opaca**, **FMP1** 178, **TFM2** 218; tree to 12 m tall; lowland forest, swamp and limestone; Kl, Tg, Pk, Sl, Jh (once each); endemic.

107.3.29 **Garcinia parvifolia** (Miq.) Miq., **FMP1** 177, **TFM2** 219; *Garcinia globulosa* Ridl., **FMP1** 176; tree to 33 m tall; lowland forest to 600 m; throughout.

107.3.30 **Garcinia penangiana** Pierre, **FMP1** 172, **TFM2** 218; tree to 15 m tall; lowland forest to 300 m; Pn, Tg, Pk, Ph.

107.3.31 **Garcinia prainiana** King, **FMP1** 180, **TFM2** 220; tree to 10 m tall; lowland forest, also cultivated; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.

107.3.32 **Garcinia pyrifera** Ridl., **FMP1** 180, **TFM2** 220; tree to 15 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Sl, Jh, Sp; endemic.

107.3.33 **Garcinia rostrata** (Hassk.) Miq., **FMP1** 169, **TFM2** 220; tree to 15 m tall; lowland and hill forest; scattered throughout.

107.3.34 **Garcinia scortechinii** King, **TFM2** 221; *Garcinia gaudichaudii auct. non* Planch. & Triana, **FMP1** 177; tree to 15 m tall; lowland and hill forest to 700 m; common throughout.

107.3.35 **Garcinia uniflora** King, **FMP1** 177 in part, **TFM2** 221; tree to 15 m tall; lower montane forest at 900–1500 m; Pk, Ph; endemic.

107.3.36 **Garcinia urophylla** Scort. *ex* King, **FMP1** 178, **TFM2** 221; shrub or small tree to 12 m tall; hill forest to 1150 m; widely scattered.

107.3.37 **Garcinia A1**, **TFM2** 222; small tree; lowland to lower montane forest; Sg Buloh FR, Sl; Raub, Ph; ?endemic.

107.3.38 **Garcinia A2**, **TFM2** 222; shrub to 4.5 m tall; lowland forest; Jh (3 or 4 collections); ?endemic.

107.3.39 **Garcinia A3**, **TFM2** 222; tree to 24 m tall; lowland forest; Kd, Pk, Ph, Sl, Jh; ?endemic.

107.3.40 **Garcinia C1**, **TFM2** 223; tree to 27 m tall; lowland and hills to 600 m; Ph, Sl; ?endemic.

107.3.41 **Garcinia C2**, **TFM2** 223; tree; lower montane forest at 700–900 m; Pn, Tg, Pk, Ph, Sl, Jh; ?endemic.

107.3.42 **Garcinia E1**, **TFM2** 223; tree to 18 m tall; lowland forest; Gg Bubu, Pk; Lepar FR, Ph; ?endemic.

107.3.43 **Garcinia E2**, **TFM2** 224; *Garcinia uniflora auct. non* King, **FMP1** 177 in part; small shrub; lowland forest; once from Gg Panti, Jh; ?endemic.

107.3.44 **Garcinia E3**, **TFM2** 224; tree to 15 m tall; lowland forest; Tg, Pk, Jh; ?endemic.

107.3.45 **Garcinia G1**, **TFM2** 224; tree to 21 m tall; lower montane forest; Tg, Ph; ?endemic.

107.3.46 **Garcinia G2**, **TFM2** 225; tree to 33 m tall; lowland forest; only known from Ulu Brang, Tg; ?endemic.

107.4.1 **Hypericum japonicum** Thunb., **FMP1** 152, **TFM2** 248, **M47** 312; herb to 25 cm tall; weed of open places; scattered.

107.5.1 **Mammea brevipes** (Craib) Kosterm., **TFM2** 226; *Ochrocarpos siamensis auct. non* (Miq.) T. Anderson, **FMP1** 180; small tree; sometimes on limestone; P. Langkawi.

107.5.2 **Mammea malayana** Kosterm., **TFM2** 226; tree to 15 m tall; lowland forest; Tg, Pk, Ph; endemic.

107.5.3 **Mammea odorata** (Rafin.) Kosterm., **TFM2** 226; small tree; sandy seashores; once from Mersing, Jh.

107.5.4 **Mammea siamensis** (Miq.) T. Anderson, **TFM2** 226; small tree; lowland forest; once from Kd.

107.6.1 **Mesua aff. assamica** (King & Prain) Kosterm., **TFM2** 232; tree to 23 m tall; lowland forest; Kd, Kl, Tg, Ph, NS, Jh.

107.6.2 **Mesua daphnifolia** (Ridl.) Kosterm., **TFM2** 228; *Kayea daphnifolia* Ridl., **FMP5** 290; small tree to 12 m tall; lowland and hill forest; Pk; endemic.

107.6.3 **Mesua elegans** (King) Kosterm., **TFM2** 229; *Kayea elegans* King, **FMP1** 191; *Kayea caudata* King, **FMP1** 191; small tree; lowland and hill forest; Pk, Ph, Sl, NS, Jh, Sp; endemic.

107.6.4 **Mesua ferrea** L., **FMP1** 192, **TFM2** 232; tree to 24 m tall; lowland forest to 480 m; throughout but commoner in the north.

107.6.5 **Mesua ferruginea** (Pierre) Kosterm., **TFM2** 230; *Kayea ferruginea* Pierre, **FMP1** 189; small tree; by lowland rivers; Kl, Ph, Jh.

107.6.6 **Mesua grandis** (King) Kosterm., **TFM2** 234; *Kayea grandis* King, **FMP1** 190; tree to 33 m tall; lowland and hill forest to 1200 m; Tg and Pk southward.

107.6.7 **Mesua kochummeniana** Whitmore, **TFM2** 234; tree to 36 m tall; lowland forest; Ph, Jh; endemic.

107.6.8a **Mesua kunstleri** (King) Kosterm. var. **curtisii** (King) Whitmore, **TFM2** 232; *Kayea kunstleri* King, **FMP1** 190 in part; shrub or tree to 18 m tall; lowland and hill forest; Kd, Pn; endemic.

107.6.8b **Mesua kunstleri** (King) Kosterm. var. **kunstleri**, **TFM2** 228; *Kayea kunstleri* King, **FMP1** 190 in part; *Kayea rivulorum* Ridl., **FMP1** 191; *Kayea kunstleri* King var. *rosea* Ridl., **FMP5** 291; shrub or small tree to 12 m tall; lowland forest; Ml and Ph northward; endemic.

107.6.9a **Mesua lepidota** T. Anderson var. **lepidota**, **FMP1** 192, **TFM2** 235; tree to 21 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Ml, Jh.

107.6.9b **Mesua lepidota** T. Anderson var. **parviflora** (Ridl.) Whitmore, **TFM2** 235; *Kayea parviflora* Ridl., **FMP1** 191; tree; hill forest to 800 m; Tg, Pk, Sl, Ml, Jh; endemic variety.

107.6.10 **Mesua nervosa** Planch. & Triana, **TFM2** 230; *Kayea nervosa* (Planch. & Triana) T. Anderson, **FMP1** 190; shrub or tree to 12 m tall; lowland forest; once from Pk.

107.6.11 **Mesua nivenii** Whitmore, **TFM2** 230; small tree to 15 m tall; lower montane forest above 1200 m; Gg Padang and Gg Mandi Angin, Tg; endemic.

107.6.12 **Mesua nuda** Kosterm. *ex* Whitmore, **TFM2** 235; tree to 29 m tall; lowland forest to 500 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.

107.6.13 **Mesua purseglovei** Whitmore, **TFM2** 229; tall tree; montane forest; known only from type, Cameron Highlands, Ph; endemic.

107.6.14 **Mesua racemosa** (Planch. & Triana) Kosterm., **TFM2** 236; *Kayea racemosa* Planch. & Triana, **FMP1** 189; tree to 24 m tall; lowland forest mostly; Kd, Kl, Tg, Pk, Ph, Sl, Ml.

107.6.15 **Mesua rosea** (Ridl.) Kosterm., **TFM2** 229; *Kayea rosea* Ridl., **FMP1** 189; lowland forest including swamps; Jh; endemic.

107.6.16 **Mesua wrayi** (King) Kosterm., **TFM2** 229; *Kayea wrayi* King, **FMP1** 189; shrub or tree to 8 m tall; upper montane forest at 1500–2100 m; Pk, Ph; endemic.

107.6.17 **Mesua sp. B**, **TFM2** 229; treelet 3 m tall; lowland forest; once from Kemahang FR, Kl; ?endemic.

107.6.18 **Mesua sp. C**, **TFM2** 230; tree; lowland forest; Bt Bauk, Tg; Gg Tapis, Ph; ?endemic.

107.6.19 **Mesua sp. D**, **TFM2** 236; tree; lowland forest; Ph, Sl, Jh; ?endemic.

107.6.20 **Mesua sp. E**, **TFM2** 232; tree to 23 m tall; lowland forest; Tg, Ph; ?endemic.

107.7.1 **Ploiarium alternifolium** (Vahl) Melchior, **TFM3** 288; *Archytaea vahlii* Choisy, **FMP1** 208; shrub or small tree to 10 m tall; swampy lowland forest, mountain tops; widespread.

108. HALORAGACEAE

108.1.1 **Gonocarpus chinensis** (Lour.) Orchard, **O03** 207; *Haloragis chinensis* (Lour.) Merr., **K07** 123, **FMı7** 243; herb to 60 cm tall; open grassy places; Sp.

108.2.1 **Myriophyllum tetrandum** Roxb., **FMi7** 255; aquatic or semi-aquatic herb; shallow open water; once from Kangar, Ps.

108.2.2 **Myriophyllum tuberculatum** Roxb., **FMi7** 256; aquatic or semi-aquatic herb; shallow stagnant water in the lowlands; Ps, Kd.

109. HAMAMELIDACEAE

109.1.1 **Altingia excelsa** Noronha, **FMP1** 692, **FMi5** 376, **TFM2** 238; tree to 45 m tall; hill and montane forest; Ph.

109.2.1 **Distyliopsis dunnii** (Hemsl.) P.K. Endress, **TFM2** 242; *Sycopsis dunnii* Hemsl., **FMi5** 371, **TFM2** 242; tree to 12 m tall; lower montane forest (1200–1500 m) or on limestone; Kl, Tg, Ph.

109.3.1 **Distylium stellare** Kuntze, **FMi5** 369, **TFM2** 239; tree to 15 m tall; lower montane forest and limestone hills; Pk, Ph.

109.4.1 **Exbucklandia populnea** (R. Br. *ex* Griff.) R.W. Br., **V15** 595; *Bucklandia populnea* R.Br. *ex* Griff., *nom. inval.*, **FMP1** 691; *Symingtonia populnea* (R.Br. *ex* Griff.) Steenis, **V13** 444, **FMi5** 375, **TFM2** 242; tree to 33 m tall; lower montane forest; widespread.

109.5.1 **Maingaya malayana** Oliv., **FMP1** 691, **FMi5** 366, **TFM2** 240; tree to 27 m tall; lowland and hill forest at 300–1000 m; Pn, Pk; endemic.

109.6.1 **Rhodoleia championii** Hook.*f.*, **FMi5** 372, **TFM2** 240; *Rhodoleia ovalifolia* Ridl., **FMP1** 690; *Rhodoleia teysmannii* Miq., **FMP1** 690; shrub or tree to 30 m tall; montane forest above 1450 m, lower on quartzite; Kd, Pk, Ph, Sl, NS, Ml.

110. HERNANDIACEAE

110.1.1 **Gyrocarpus americanus** Jacq., **TFM2** 244, **FMi12** 743; *Gyrocarpus jacquinii* Gaertn., **FMP3** 139; small tree; coastal; Kd, Pn (very rare).

110.2.1 **Hernandia nymphaeifolia** (Presl) Kubitzki, **TFM2** 245, **FMi12** 747; *Hernandia peltata* Meisn., **FMP3** 138; tree to 18 m tall; coastal and offshore islands; P. Langkawi, Kd, Tg, Pk, Jh.

110.3.1 **Illigera parviflora** Dunn, **K73** 177, **TFM2** 247, **FMi12** 759; *Illigera appendiculata auct. non* Blume, **FMP3** 139 in part; liana; hill forest; Pk, Ph.

110.3.2 **Illigera pulchra** Blume, **K73** 174, **TFM2** 247, **FMi12** 759; *Illigera lucida* Teijsm. & Binn., **FMP3** 140; liana; on limestone; Ps, P. Langkawi, Pk.

110.3.3 **Illigera trifoliata** (Griff.) Dunn, **K73** 169, **TFM2** 247, **FMi12** 760; *Illigera appendiculata auct. non* Blume, **FMP3** 139 in part; liana; Kd, Kl, Pk, Ph, Sl.

111. HYDRANGEACEAE

111.1.1 **Dichroa febrifuga** Lour., **FMP1** 681, **TFM4** 462; shrub to 2 m tall; montane forest above 1000 m; Pk, Ph, Sl.

112. HYDROPHYLLACEAE

112.1.1 **Hydrolea zeylanica** (L.) Vahl, **FMP2** 438, **FMi4** 207, **M47** 310; creeping herb ascending to 30 cm; ditches, paddyfields; widespread.

113. ICACINACEAE

113.1.1 **Apodytes dimidiata** E. Mey. *ex* Arn., **FMi7** 48, **TFM3** 109; small tree to 9 m tall; montane forest; Kl, Ph.

113.2.1 **Cantleya corniculata** (Becc.) Howard, **FMi7** 51, **TFM3** 110; *Cantleya johorica* Ridl., **FMP1** 436; *Stemonurus corniculatus* (Becc.) Ridl., **FMP5** 297; tree to 40 m tall; lowland forest, often under swampy conditions; Jh, Sp.

113.3.1 **Gomphandra capitulata** (Jungh. & de Vriese) Becc., **FMi7** 24, **TFM3** 110; *Gomphandra nyssifolia* King, **FMP1** 427; tree to 20 m tall; montane forest above 1000 m; Pk, Ph.

113.3.2a **Gomphandra quadrifida** (Blume) Sleumer var. **angustifolia** (King) Sleumer, **FMi7** 34, **TFM3** 111; *Gomphandra lanceolata* (Mast.) King var. *angustifolia* King, **FMP1** 428 in part; *Gomphandra salicifolia* Ridl., **FMP1** 429; wiry rheophytic shrub; lowland to montane forest near streams; Kd, Pn, Kl, Pk, Ph, Sp.

113.3.2b **Gomphandra quadrifida** (Blume) Sleumer var. **maingayi** (Mast.) Sleumer, **FMi7** 34, **TFM3** 111; *Gomphandra maingayi* (Mast.) King, **FMP1** 429; shrub; hill forest at 900–1500 m; Pn; endemic variety.

113.3.2c **Gomphandra quadrifida** (Blume) Sleumer var. **ovalifolia** (Ridl.) Sleumer, **FMi7** 34, **TFM3** 111; *Gomphandra ophirensis* Ridl., *nom. illeg.*, **FMP1** 427; *Gomphandra lanceolata* (Mast.) King , **FMP1** 428 incl. var. *ovalifolia* Ridl.; *Gomphandra pubescens* Ridl., **FMP1** 429; shrub; lowland to lower montane forest at 1200 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

113.3.2d **Gomphandra quadrifida** (Blume) Sleumer var. **quadrifida**, **FMı7** 33, **TFM3** 111; *Gomphandra affinis sensu* Ridl., **FMP1** 427 incl. var. *floribunda* Ridl.; *Gomphandra penangiana* Wall. *ex* Mast., **FMP1** 427; shrub to 5 m tall; lowland and hill forest; widespread.

113.3.2e **Gomphandra quadrifida** (Blume) Sleumer var. **triplinervis** (King) Sleumer, **FMı7** 33, **TFM3** 112; *Gomphandra lanceolata* (Mast.) King var. *triplinervis* King, **FMP1** 428; shrub to 5 m tall; lowland forest; P. Langkawi, Kd, Pn, Tg, Pk.

113.4.1 **Gonocaryum crassifolium** Ridl., **FMP1** 432, **FMı7** 16, **TFM3** 112; shrub; montane forest; once from Sempang Mines, Sl; endemic.

113.4.2 **Gonocaryum gracile** Miq., **FMı7** 17, **TFM3** 113; *Gonocaryum longeracemosum* King, **FMP1** 431; shrub or small tree to 12 m tall; lowland and hill forest; Kl, Tg, Ph, Sl, Ml, Jh.

113.4.3 **Gonocaryum lobbianum** (Miers) Kurz, **FMı7** 20, **TFM3** 113; shrub to 6 m tall; lowland forest; Ps, Pk.

113.4.4 **Gonocaryum macrophyllum** (Blume) Sleumer, **FMı7** 19, **TFM3** 113; shrub or small tree to 6 m tall; coastal forest; P. Berhala and P. Jarak.

113.4.5 **Gonocaryum sp. A**, **TFM3** 113; tree to 6 m tall; once from Bt Bauk F.R., Tg; ?endemic.

113.5.1 **Iodes cirrhosa** Turcz., **FMı7** 70, **TFM3** 109; *Iodes ovalis auct. non* Blume, **FMP1** 435; liana to 10 m or more long; Pk, Sl, Ml, Jh, Sp.

113.5.2 **Iodes ovalis** Blume, **FMı7** 68, **TFM3** 109; *Iodes oblonga* Planch., **FMP1** 435; slender scandent shrub; lowland forest margins; Pn to Sp.

113.5.3 **Iodes reticulata** King, **FMP1** 434, **FMı7** 69, **TFM3** 109; liana to 9 m long; lowland forest; Pk, Ph, NS; endemic.

113.5.4 **Iodes velutina** King, **FMP1** 434, **FMı7** 72, **TFM3** 109; liana; lowland forest margins; Pk, NS, Ml, Sp; endemic type variety.

113.6.1 **Medusanthera gracilis** (King) Sleumer, **FMı7** 46, **TFM3** 114; *Gomphandra lanceolata* King var. *angustifolia auct. non* King, **FMP1** 428 in part; *Gomphandra gracilis* King, **FMP1** 429 incl. var. *gracillima* Ridl.; shrub or small tree to 9 m tall; lowland and hill forest; Tg, Pk, Ph, Sl, Jh.

113.6.2 **Medusanthera laxiflora** (Miers) Howard, **FMı7** 46, **TFM3** 114; small tree; lowland forest; twice from Kl.

113.7.1 **Miquelia caudata** King, **FMP1** 433, **FMı7** 78, **TFM3** 109; slender climber to 6 m long; hill forest; Tg, Pk, Sl.

113.8.1 **Phytocrene bracteata** Wall., **FMP1** 432, **FMi7** 85, **TFM3** 109; high-climbing minutely-prickly liana; lowland forest; widespread.

113.8.2 **Phytocrene oblonga** Wall., **FMP1** 432, **FMi7** 84, **TFM3** 109; high-climbing liana; lowland forest; widespread.

113.8.3 **Phytocrene palmata** Wall., **FMP1** 433, **FMi7** 84, **TFM3** 109; minutely prickly liana; lowland forest to 500 m; Pn, Pk, Sl.

113.8.4 **Phytocrene trichura** Ridl., **FMP1** 433, **FMi7** 83, **TFM3** 109; large woody climber; lowland forest; Pk, Ph, Sl; endemic.

113.9.1 **Platea excelsa** Blume var. **riedeliana** (Becc.) Sleumer, **FMi7** 13, **TFM3** 115; tree to 24 m tall; peat swamp forest; once from near Pontian, Jh.

113.9.2 **Platea latifolia** Blume, **FMP1** 426, **FMi7** 11, **TFM3** 115; tree to 27 m tall; lowland to montane forest at 1500 m; Kd, Pn, Pk, Ph, Jh.

113.10.1 **Sarcostigma kleinii** Wight & Arn., **FMP5** 297, **FMi7** 74, **TFM3** 109; much-branched stout liana; lowland forest; once each from Kl and Ml.

113.10.2 **Sarcostigma paniculata** Pierre, **FMP5** 298, **FMi7** 75, **TFM3** 109; stout liana to 30 m long; lowland forest; once from Larut, Pk.

113.11.1 **Stemonurus malaccensis** (Mast.) Sleumer, **FMi7** 60, **TFM3** 117; *Stemonurus capitatus* Becc., **FMP1** 431; tree to 21 m tall; lowland and hill forest to 1300 m; throughout.

113.11.2 **Stemonurus scorpioides** Becc., **FMP5** 296, **FMi7** 58, **TFM3** 117; *Stemonurus secundiflorus auct. non* Blume, **FMP1** 430 in part; tree to 33 m tall; lowland forest; Tg, Pk, Ph, Sl, Jh, Sp.

113.11.3 **Stemonurus secundiflorus** Blume, **FMP2** 430 in part, **FMP5** 296, **FMi7** 59, **TFM3** 117; tree to 12 m tall; forests to 1500 m, mostly in lowland swamps; Pk, Ph, Sl, Jh.

113.11.4 **Stemonurus umbellatus** Becc., **FMP1** 431, **FMi7** 62, **TFM3** 118; tree to 30 m tall; lowland to montane forest at 1400 m; Pk, Ph, Sl, NS, Ml, Jh.

114. ILLICIACEAE

114.1.1 **Illicium peninsulare** A.C. Sm., **S28** 56, **TFM2** 254, **S05** 343; *Illicium cambodianum auct. non* Hance, **FMP1** 18 in part incl. var. *crassifolia* Ridl. in part; tree to 7.5 m; montane forest at 450–1500 m; Ph, Sl, Ml, Jh.

114.1.2 **Illicium ridleyanum** A.C. Sm., **S28** 66, **TFM2** 254, **S05** 344; *Illicium cambodianum auct. non* Hance, **FMP1** 18 in part incl. var. *crassifolia* Ridl. in part; tree to 15 m tall; montane forest at 600–2010 m; Kl, Tg, Pk, Ph, Sl, Jh; endemic.

114.1.3 **Illicium tenuifolium** (Ridl.) A.C. Sm., **S28** 68 incl. vars. *angustifolium* A.C. Sm. and *obovatum* A.C. Sm., **TFM2** 254, **S05** 349; *Illicium cambodianum auct. non* Hance, **FMP1** 18 in part; *Illicium cambodianum* var. *tenuifolia* Ridl., **FMP1** 18; tree to 7.5 m; lowland to montane forest at 1500 m; P. Langkawi, Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

115. IRVINGIACEAE

115.1.1 **Irvingia malayana** Oliv. *ex* Benn., **FMP1** 364, **FMi6** 225, **TFM2** 350; tree to 40 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

116. IXONANTHACEAE

116.1.1 **Allantospermum borneense** Forman, **TFM2** 347; tree to 40 m tall; hill and lower montane forest; Kd, Tg, Pk.

116.2.1 **Ixonanthes icosandra** Jack, **FMP1** 325, **TFM1** 307, **FMi10** 625; tree to 30 m tall; primary and secondary forest, mostly lowlands; throughout.

116.2.2 **Ixonanthes reticulata** Jack, **FMP1** 326, **TFM1** 307, **FMi10** 626; tree to 40 m tall; lowland and hill forest; throughout.

117. JUGLANDACEAE

117.1.1 **Engelhardtia apoensis** Elmer ex Nagel, **FMi6** 151, **TFM1** 234; tree to 30 m tall; lower montane forest; Main Range (Kl to Sl).

117.1.2 **Engelhardtia roxburghiana** Wall., **FMi6** 154, **TFM1** 235; *Engelhardtia wallichiana* Lindl., **FMP3** 370; tree to 20 m tall; hill and montane forest at 700–1500 m; Kd, Pn, Pk, Ph,.

117.1.3 **Engelhardtia serrata** Blume, **FMi6** 150, **TFM1** 236; *Engelhardia nudiflora* Hook.*f.*, **FMP3** 369; tree 20–25 m tall; lowland to montane forest at 2000 m; Kd, Pn, Pk, Ph, Ml, Jh, Sp.

117.1.4 **Engelhardtia spicata** Lesch. *ex* Blume, **FMP3** 368, **FMi6** 151, **TFM1** 236; tree to 30 m tall; lowland and hill forest; Pk.

118. LABIATAE

118.1.1 **Acrocephalus hispidus** (L.) Nicolson & Sivad., **N11** 151; *Acrocephalus capitatus* (Roth) Benth., **FMP2** 644; *Acrocephalus indicus* (Burm.*f.*) Kuntze, **FMi8** 365; herb to 1 m tall; open sandy places; once from Ph.

118.2.1 **Acrymia ajugiflora** Prain, **FMP2** 654, **FMi8** 312; low softly-woody shrub; lowland forest; Pk, Sl; endemic.

118.3.1 **Anisomeles indica** (L.) Kuntze, **FMi8** 329; *Anisomeles ovata* R.Br., **FMP2** 649; herb to 2 m tall; waste ground; Pn, Pk, Sl, Ml, Sp.

118.3.2 **Anisomeles malabarica** (L.) R. Br. *ex* Sims, **FMP2** 649, **FMi8** 329; shrubby herb to 1.5 m tall; waste ground; twice from Pn; probably introduced.

118.4.1 **Basilicum polystachyon** (L.) Moench, **FMi8** 366, **M47** 316; *Moschosma polystachyum* (L.) Benth., **FMP2** 644; herb to 1 m tall; rice-fields; Ps, Kd, Pn.

118.5.1 **Cymaria dichotoma** Benth., **FMP2** 654, **FMi8** 315; shrub to 2 m tall; mostly on limestone; Ps, Kd, Pk.

118.6.1 **Gomphostemma curtisii** Prain, **FMP2** 654, **FMi8** 322; *Cyrtandromoea repens* Ridl., **FMP2** 543; herb to 1.5 m tall; hill and montane forest at 250–1300 m; Pk, Ph.

118.6.2 **Gomphostemma crinitum** Wall. *ex* Benth., **FMP2** 652 incl. var. *griffithii* Prain, **FMi8** 321; herb to 1.5 m tall; mostly on limestone; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml.

118.6.3 **Gomphostemma javanicum** (Blume) Benth., **FMi8** 322; *Gomphostemma oblongum* Wall. *ex* Benth., **FMP2** 653 incl. var. *setosa* Ridl.; *Gomphostemma lacteum* Ridl., **FMP5** 326; erect herb to 2 m tall; montane forest; Kd, Pn, Kl, Ph, Sl, Jh.

118.6.4 **Gomphostemma microcalyx** Prain, **FMP2** 652, **FMi8** 321; herb to 1.5 m tall; lowland forest; Pk, Ml.

118.6.5 **Gomphostemma scortechinii** Prain, **FMP2** 653, **FMi8** 323; herb to 1.5 m tall; hill forest; Kl, Pk, Sl.

118.7.1 **Hyptis brevipes** Poit., **FMP2** 645, **FMi8** 369, **M47** 318; herb to 1.5 m tall; damp waste ground; Ml, Jh, Sp; naturalized from Mexico.

118.7.2 **Hyptis capitata** Jacq., **FMi8** 369, **M47** 320; herb to 2.5 m tall; waste ground; Pk, Ph, Sp; naturalized from tropical America.

118.7.3 **Hyptis suaveolens** (L.) Poit., **FMP2** 645, **FMi8** 371; aromatic herb to 2 m tall; dry open places, often near the sea; Sl, Sp; naturalized from tropical America.

118.8.1 **Leonotis nepetifolia** (L.) R.Br., **FMi8** 335; herb to 2.5 m tall; waste ground; widespread; naturalized from tropical Africa.

118.9.1 **Leonurus sibiricus** L., **FMP2** 651, **FMi8** 336; herb to 1.5 m tall; waste places; Kl, Pk, Ph, Sl, Ml, Sp; naturalized from temperate Asia.

118.10.1 **Leucas aspera** (Willd.) Link, **FMı8** 337; herb to 60 cm tall; dry open sites; scattered.

118.10.2 **Leucas decemdentata** (Willd.) Sm., **FMı9** 567, **S32** 237; *Leucas flaccida* R. Br., **FMı8** 340; *Leucas mollissima* Wall. *ex* Benth., **C14** 160; herb to 60 cm tall; on limestone rocks; Kd.

118.10.3 **Leucas lavandulifolia** Sm., **FMP2** 650, **FMı8** 338, **M47** 322, **S29** 238; *Leucas linifolia* (Roth) Spreng., **FMı9** 566; herb to 80 cm tall; waste ground, coconut plantations; Pn, Ml, Sp.

118.10.4 **Leucas martinicensis** R.Br., **FMP2** 650, **FMı8** 340; herb to 60 cm tall; waste ground; once from Pk.

118.10.5 **Leucas zeylanica** (L.) R. Br., **FMP2** 650, **FMı8** 338; herb to 60 cm tall; waste ground, roadsides; Pn, Kl, Pk, Ph, Sl, Ml, Jh, Sp.

118.11.1 **Ocimum americanum** L., **FMı8** 376; *Ocimum canum* Sims, **FMP2** 644; aromatic herb to 1 m tall; cultivated and waste ground; Pk, Sp.

118.11.2 **Ocimum basilicum** L., **FMP2** 643, **FMı8** 377; very aromatic herb to 1 m tall; waste ground, much cultivated; Pn, Pk, Ph, Jh, Sp.

118.11.3 **Ocimum gratissimum** L., **FMP2** 644, **FMı8** 377; herb to 3 m tall; roadsides, waste ground; Pk.

118.11.4 **Ocimum tenuiflorum** L., **FMı8** 378; *Ocimum sanctum* L., **FMP2** 643; bushy herb to 60 cm tall; common weed of waste ground; P. Langkawi, Kd, Pn, Pk, Ph, Sl, Ml, Jh, Sp.

118.12.1 **Orthosiphon aristatus** (Blume) Miq., **FMı8** 380; *Orthosiphon stamineus* Benth., **FMP2** 645; herb to 2 m tall; forest margins, widely cultivated; P. Lankawi, Kl, Pk, Ph.

118.13.1 **Paraphlomis javanica** (Blume) Prain *ex* Back. & Bakh.*f*., **FMı8** 350; *Paraphlomis rugosa* (Benth.) Prain, **FMP2** 651; subshrub to 1.8 m tall; clarings in lowland and hill forest; Pk, Ph, Sl.

118.14.1 **Plectranthus kunstleri** Prain, **FMP2** 646, **FMı8** 392, **C14** 160; herb to 120 cm tall; on limestone; P. Laggun (Langkawi group) and Kuala Dipang, Pk; endemic.

118.15.1 **Pogostemon auricularius** (L.) Hassk., **FMı8** 356, **M47** 324; *Dysophylla auricularia* (L.) Blume, **FMP2** 648; herb to 80 cm tall; damp open places; Kl, Ph, NS, Ml, Jh, Sp.

118.15.2 **Pogostemon cablin** (Blanco) Benth., **FMı8** 353; aromatic erect herb to 1 m tall; clearings; once from Sl.

118.15.3 **Pogostemon heyneanus** Benth., **FMP2** 647, **FMI8** 353; aromatic erect herb to 1.5 m tall; forest clearings; Pn, Pk, Ph, Sl, NS, Ml.

118.15.4 **Pogostemon stellatus** (Lour.) Kuntze, **FMI8** 352; *Dysophylla verticillata* (Roxb.) Benth., *nom. illeg.*, **FMP2** 648; herb to 1 m tall; weed of rice fields; Ps, P. Langkawi, Pk.

118.16.1 **Satureja gracilis** (Benth.) Loes., **FMI8** 361; *Calamintha gracilis* Benth., **FMP2** 648; slender prostrate herb; open ground in the hills; around Taiping, Pk.

118.17.1 **Scutellaria discolor** Wall. *ex* Benth., **FMP2** 649, **FMI8** 324; herb to 50 cm tall; mountains; Kd, Pk, Ph.

118.18.1 **Solenostemon scutellarioides** (L.) Codd, **S32** 222; *Coleus atropurpureus* Benth., **FMP2** 646; *Plectranthus scutellarioides* (L.) R.Br., **FMI8** 389; herb with multi-coloured foliage to 1.5 m tall; waste ground; Pn, Pk, Ph, Ml, Jh, Sp.

119. LAURACEAE

119.1.1 **Actinodaphne borneensis** Meisn., **TFM4** 103; shrub to 5 m tall; swampy lowland forest; Tg, Jh.

119.1.2 **Actinodaphne concinna** Ridl., **FMP3** 110, **TFM4** 104; shrub to 3 m tall; montane forest; Tg, Ph, Sl; endemic.

119.1.3 **Actinodaphne cuspidata** Gamble, **FMP3** 111, **TFM4** 104; small tree to 15 m tall; lowland forest; known only from type, Ulu Bera, Pk; endemic.

119.1.4 **Actinodaphne fragilis** Gamble, **FMP3** 111, **TFM4** 104; tree to 18 m tall; lowland forest; twice from Pk; endemic.

119.1.5 **Actinodaphne glomerata** (Blume) Nees, **FMP3** 108, **TFM4** 104; tree to 18 m tall; lowland forest; Tg, Pk, Jh, Sp.

119.1.6 **Actinodaphne johorensis** Gamble, **FMP3** 109, **TFM4** 104; small tree to 6 m tall; hill forest; once each from Ph and Jh; endemic.

119.1.7 **Actinodaphne macrophylla** (Blume) Nees, **TFM4** 105; *Actinodaphne maingayi* Hook.*f.*, **FMP3** 108; tree to 24 m tall; lowland to montane forest; Kl, Pk, Ph, Sl, Ml, Jh.

119.1.8 **Actinodaphne malaccensis** Hook.*f.*, **FMP3** 109, **TFM4** 105; *Actinodaphne hullettii* Gamble, **FMP3** 110; tree; lowland forest; Pk, Ml, Sp; endemic.

119.1.9 **Actinodaphne montana** Gamble, **FMP3** 108, **TFM4** 105; small tree; montane forest; once from Gg Tahan, Ph.

119.1.10 **Actinodaphne oleifolia** Gamble, **FMP3** 111 incl. var. *glabra* Ridl., **TFM4** 106; *Actinodaphne gelonioides* Ridl., **FMP3** 111; shrub to 3 m tall; montane forest; Kl, Tg, Pk, Ph.

119.1.11 **Actinodaphne pruinosa** Nees, **FMP3** 110 incl. var. *kunstleri* Gamble, **TFM4** 106; tree to 20 m tall; lowland and hill forest; Kd, Pn, Sl, NS, Ml, Sp; endemic.

119.1.12 **Actinodaphne ridleyi** Gamble, **FMP3** 109, **TFM4** 106; shrub or small tree; montane forest; once from Gg Pulai, Jh.

119.1.13a **Actinodaphne sesquipedalis** Hook.*f.* var. **glabra**, **TFM4** 108; tree to 15 m tall; lowland and hill forest; Kl, Tg, Ph.

119.1.13b **Actinodaphne sesquipedalis** Hook.*f.* var. **macrocarpa** (Gamble) Ridl., **FMP3** 108, **TFM4** 108; tree to 15 m tall; montane forest above 1200 m; Pk, Ph.

119.1.13c **Actinodaphne sesquipedalis** Hook.*f.* var. **sesquipedalis**, **FMP3** 107, **TFM4** 108; tree to 15 m tall; lowland forest; Kd, Pn, Pk, Sl, NS.

119.1.14 **Actinodaphne sphaerocarpa** (Blume) Nees, **TFM4** 108; tree to 30 m tall; lowlands; Kd, Pn, Pk.

119.1.15 **Actinodaphne sp. A**, **TFM4** 108; shrub to 5 m tall; peat swamp forest; once from Jh; ?endemic.

119.1.16 **Actinodaphne sp. B**, **TFM4** 108; shrub; montane forest above 1200 m; only known from Fraser's Hill, Ph; ?endemic.

119.1.17 **Actinodaphne sp. C**, **TFM4** 109; shrub; heath forest; once from Tanjong Hantu F.R., Pk; ?endemic.

117.1.18 **Actinodaphne sp. D**, **TFM4** 109; tree to 21 m tall; montane forest at 1200–1500 m; Cameron Highlands, Ph (common); endemic.

119.2.1 **Alseodaphne albifrons** Kosterm., **TFM4** 111; tree to 39 m tall; lowland and hill forest; Tg, Jh.

119.2.2 **Alseodaphne bancana** Miq., **FMP3** 98, **TFM4** 111; tree to 27 m tall; swampy lowland forest; Sl, Jh, Sp.

119.2.3 **Alseodaphne corneri** Kosterm., **TFM4** 111; tree to 6 m tall; lowland forest; Jh thrice collected; endemic.

119.2.4 **Alseodaphne dura** Kosterm., **TFM4** 112; tree to 30 m tall; lowland forest; Tg, Ph; endemic.

119.2.5 **Alseodaphne foxiana** (Gamble) Kosterm., **TFM4** 112; *Beilschmiedia foxiana* Gamble, **FMP3** 86; *Nothaphoebe reticulata* Gamble, **FMP3** 102 in part; tree to 15 m tall; montane forest above 1000 m; Kd, Pn, Pk, Ph, Sl; endemic.

119.2.6 **Alseodaphne garciniicarpa** Kosterm., **TFM4** 112; tree to 24 m tall; lowland forest; thrice from Pk; endemic.

119.2.7 **Alseodaphne insignis** Gamble, **FMP3** 99, **TFM4** 112; tree to 39 m tall; lowland forest; Tg, Pk, Ph, Sl.

119.2.8 **Alseodaphne intermedia** Kosterm., **TFM4** 113; tree to 45 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, Jh, Sp.

119.2.9 **Alseodaphne macrantha** Kosterm., **TFM4** 113; tree to 30 m tall; lowland to montane forest; Tg, Pk, Ph, Jh; endemic.

119.2.10 **Alseodaphne micrantha** Kosterm., **TFM4** 114; tree to 38 m tall; lowland forest; Jh; endemic.

119.2.11 **Alseodaphne nigrescens** (Gamble) Kosterm., **TFM4** 114; *Dehaasia nigrescens* Gamble, **FMP3** 88; small tree to 15 m tall; lowland to montane forest; Pn, Pk, Ph, Sl, Sp.

119.2.12 **Alseodaphne oblanceolata** (Merr.) Kosterm., **TFM4** 114; tree to 18 m tall; hill forest; Kd, Sl, Jh.

119.2.13 **Alseodaphne obovata** Kosterm., **TFM4** 115; tree to 33 m tall; lowland and hill forest; Kl, Tg, Pk, Jh.

119.2.14 **Alseodaphne paludosa** Gamble, **FMP3** 99, **TFM4** 115; tree to 30 m tall; swampy lowland forest; Pk, Sl; endemic.

119.2.15 **Alseodaphne peduncularis** (Wall. *ex* Nees) Meisn., **FMP3** 98, **TFM4** 115; *Nothaphoebe fruticosa* Gamble, **FMP3** 101; small tree to 12 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

119.2.16 **Alseodaphne pendulifolia** Gamble, **FMP3** 100, **TFM4** 115; tree to 18 m tall; lowland forest; Tg, Pk, Ph, Sl, Jh.

119.2.17 **Alseodaphne perakensis** (Gamble) Kosterm., **TFM4** 116; *Stemmatodaphne perakensis* Gamble, **FMP3** 106; tree to 12 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Jh.

119.2.18 **Alseodaphne ridleyi** Gamble, **FMP3** 99, **TFM4** 116; tree to 21 m tall; lowland forest; Tg, Ph, Sl; endemic.

119.2.19 **Alseodaphne rubrolignea** Kosterm., **TFM4** 116; *Alseodaphne petiolaris auct. non* Hook.*f.*, **FMP3** 99; tree to 15 m tall; montane forest; Ph.

119.2.20 **Alseodaphne wrayi** Gamble, **FMP3** 98, **TFM4** 116; tree; lowland forest; Pk.

119.2.21 **Alseodaphne sp. 1**, **TFM4** 117; tree to 21 m tall; lowland and hill forest; twice from Jh; endemic.

119.2.22 **Alseodaphne sp. 2**, **TFM4** 117; small tree to 12 m tall; lowland swamp forest; once from Jh; ?endemic.

119.2.23 **Alseodaphne sp. 3**, **TFM4** 117; tree to 27 m tall; lowland and hill forest to 1000 m; Tg, Ph; endemic.

119.3.1 **Beilschmiedia brevipes** Ridl., **FMP3** 86, **TFM4** 118; small tree; lowland forest near streams; once each from Kl, Tg, Ph; ?endemic.

119.3.2 **Beilschmiedia dictyoneura** Kosterm., **TFM4** 119; tree to 35 m tall; lowland to lower montane forest at 1000 m; Kd, Kl, Tg, NS, Jh.

119.3.3 **Beilschmiedia glabra** Kosterm., **TFM4** 119; tree to 24 m tall; lowland and hill forest to 900 m; Ph, Jh.

119.3.4 **Beilschmiedia glauca** S.K. Lee & L.F. Lau, **TFM4** 119; tree to 21 m tall; montane forest; Kl, Tg, Ph.

119.3.5 **Beilschmiedia insignis** Gamble, **FMP3** 82, **TFM4** 119; tree to 34 m tall; lowland to lower montane forest; Kl, Pk, Ph, Sl; endemic.

119.3.6 **Beilschmiedia kunstleri** Gamble, **FMP3** 83, **TFM4** 120; small tree; lowland and hill forest; Tg, Pk, Ph, Jh.

119.3.7 **Beilschmiedia lucidula** (Miq.) Kosterm., **TFM4** 120; tree to 21 m tall; lowland forest; P. Langkawi, Kd, Kl, Ph.

119.3.8 **Beilschmiedia lumutensis** Gamble, **FMP3** 84, **TFM4** 120; shrub or small tree to 6 m tall; lowland forest; Kl, Pk, Ph, Jh; endemic.

119.3.9 **Beilschmiedia madang** Blume, **TFM4** 120; *Beilschmiedia malaccensis* Hook.*f*., **FMP3** 83; *Beilschmiedia curtisii* Gamble, **FMP3** 84; *Beilschmiedia scortechinii* Gamble, **FMP3** 84; tree to 24 m tall; lowland and hill forest to 900 m; Pn, Tg, Pk, Ph, Sl, Jh.

119.3.10 **Beilschmiedia maingayi** Hook.*f*., **FMP3** 84, **TFM4** 121; tree to 18 m tall; hill and montane forest to 1200 m; Tg, Pk, Ph, Ml.

119.3.11 **Beilschmiedia membranacea** Gamble, **FMP3** 86, **TFM4** 121; tree to 6 m tall; hill forest; once each from Pk and Ph; endemic.

119.3.12 **Beilschmiedia pahangensis** Gamble, **FMP3** 86, **TFM4** 121; tree to 15 m tall; common on riverbanks in lowland forest; Kl, Pk, Ph; endemic.

119.3.13 **Beilschmiedia palembanica** (Miq.) Kosterm., **TFM4** 121; *Beilschmiedia longipes* Hook.*f*., **FMP3** 85; tree to 30 m tall; lowland to montane forest; Pk, Ph, Sl, Ml, Jh.

119.3.14 **Beilschmiedia penangiana** Gamble, **FMP3** 85, **TFM4** 122; tree to 12 m tall; hill forest; Pn; endemic.

119.3.15 **Beilschmiedia perakensis** Gamble, **FMP3** 85, **TFM4** 122; tree to 10 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, NS.

119.3.16 **Beilschmiedia tonkinensis** (Lecomte) Ridl., **FMP3** 85, **TFM4** 122; tree to 15 m tall; lowland forest, often coastal; Pk, Ph, Jh.

119.3.17 **Beilschmiedia wallichiana** Kosterm., **TFM4** 122; tree to 15 m tall; twice collected, Pn, Pk.

119.3.18 **Beilschmiedia sp. A**, **TFM4** 123; tree to 15 m tall; montane forest 750–1500 m; Ph; endemic.

119.4.1 **Cassytha filiformis** L., **FMP3** 137, **TFM4** 102; leafless twining parasitic vine; common on sandy coasts; widespread.

119.5.1 **Cinnadenia malayana** Kosterm., **TFM4** 123; tree to 22 m tall; hill forest; Sl, NS; endemic.

119.6.1 **Cinnamomum altissimum** Kosterm., **TFM4** 127; tree to 39 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, Sl, Jh; endemic.

119.6.2 **Cinnamomum aureofulvum** Gamble, **FMP3** 95, **TFM4** 125; small tree to 12 m tall; montane forests above 1200 m; Sl, Ph; endemic.

119.6.3 **Cinnamomum cordatum** Kosterm., **TFM4** 125; tree to 6 m tall; montane forests; Pk, Ph; endemic.

119.6.4 **Cinnamomum cuspidatum** Miq., **TFM4** 126; *Cinnamomum graciliflorum* Gamble, **FMP3** 91; tree; lowland to montane forest; Kl, Pk, Ph.

119.6.5 **Cinnamomum impressicostatum** Kosterm., **TFM4** 126; tree to 15 m tall; montane forest at 1200–1500 m; Ph; endemic.

119.6.6 **Cinnamomum iners** Reinw., **FMP3** 92 incl. var. *angustifolium* Ridl., **TFM4** 126; *Cinnamomum paraneuron* Miq., **FMP3** 92; tree to 24 m tall; primary and secondary forest in lowlands and hills; common throughout.

119.6.7 **Cinnamomum javanicum** Blume, **FMP3** 94, **TFM4** 126; tree to 21 m tall; lowland and hill forest; Kd, Pk, Ph, Jh.

119.6.8 **Cinnamomum kunstleri** Ridl., **FMP3** 94, **TFM4** 127; tree to 12 m tall; lowland forest; Pn, Pk, Ml (once each); endemic.

119.6.9 **Cinnamomum microphyllum** Ridl., **FMP3** 92, **TFM4** 127; shrub or small tree to 6 m tall; montane forest at 1000–1500 m; Pk, Ph; endemic.

119.6.10 **Cinnamomum mollissimum** Hook.*f.*, **FMP3** 95, **TFM4** 128; tree to 15 m tall; lowland and hill forest; Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh; endemic.

119.6.11 **Cinnamomum pachypes** Kosterm., **TFM4** 128; tree to 13 m tall; hill forest; known only from type, Sl; endemic.

119.6.12 **Cinnamomum porrectum** (Roxb.) Kosterm., **TFM4** 128; *Cinnamomum parthenoxylon* Meisn., **FMP3** 96; *Cinnamomum inunctum* Meisn., **FMP3** 97; tree to 45 m tall; lowlands to mountains; Ml and Ph northward.

117.6.13 **Cinnamomum puberulum** Ridl., **FMP3** 96, **TFM4** 128; tree to 15 m tall; lowland to montane forest; Kd, Ph; endemic.

119.6.14 **Cinnamomum pubescens** Kochummen, **TFM4** 129; small tree to 7 m tall; montane forest at 1500 m; only known from Cameron Highlands, Ph; endemic.

119.6.15 **Cinnamomum rhynchophyllum** Miq., **FMP3** 93 incl. var. *lampongum* Miq., **TFM4** 130; tree to 12 m tall; lowland and hill forest; Kd, Pk, Ph, Jh.

119.6.16 **Cinnamomum saffrol** Kosterm., **TFM4** 130; tree to 21 m tall; hill forest at about 400 m; thrice from Ph; endemic.

119.6.17a **Cinnamomum scortechinii** Gamble var. **scortechinii**, **FMP3** 95, **TFM4** 130; *Cinnamomum velutinum* Ridl., **FMP3** 95; tree to 30 m tall; lower montane forest at about 1200 m; Kl, Tg, Ph, Sl; endemic.

119.6.17b **Cinnamomum scortechinii** Gamble var. **selangorense** Ridl., **FMP3** 95, **TFM4** 131 '*selangorensis*'; tree to 30 m tall; montane forest at about 1500 m; twice from Gg Ulu Kali, Sl; endemic.

119.6.18 **Cinnamomum sintoc** Blume, **TFM4** 131; *Cinnamomum cinereum* Gamble, **FMP3** 96; tree to 39 m tall; lowland to montane forest; Kd, Kl, Pk, Ph, Sl, Ml, Jh.

119.6.19 **Cinnamomum subavenium** Miq., TFM4 131; *Cinnamomum ridleyi* Gamble, **FMP3** 93; tree to 30 m tall; lowland to montane forest at 1200 m; Kd, Kl, Tg, Sl, Sp

117.6.20 **Cinnamomum subcuneatum** Miq., **TFM4** 131; tree to 20 m tall; lowland forest; Pn, Pk, Ml, Jh.

119.6.21 **Cinnamomum vimineum** Nees, **FMP3** 92, **TFM4** 132; small tree; hill and montane forest; Kd, Pn, Kl, Ph.

119.7.1 **Cryptocarya bracteolata** Gamble, **FMP3** 79, **TFM4** 133; tree to 20 m tall; rocky forests in lowlands and mountains; Pk, Ph; endemic.

119.7.2 **Cryptocarya caesia** Blume, **FMP3** 81, **TFM4** 133; tree; lowland forest; Ml, Sp.

119.7.3 **Cryptocarya costata** Blume, **TFM4** 133; tree to 21 m tall; lowland forest by streams; Kd, Ph, Jh.

119.7.4 **Cryptocarya crassinervia** Miq., **FMP3** 78, **TFM4** 133; tree to 20 m tall; lowland and hill forest to 900 m; Kd, Tg, Pk, Ph, Jh.

119.7.5 **Cryptocarya densiflora** Blume, **FMP3** 77, **TFM4** 134; tree to 20 m tall; hill and montane forest to 1500 m; Kl, Pk, Ph, Sl.

119.7.6 **Cryptocarya enervis** Hook.*f.*, **FMP3** 81, **TFM4** 134; small tree; lowland forest; Sl, Ml.

119.7.7 **Cryptocarya ferrea** Blume, **FMP3** 79, **TFM4** 134; tree to 22 m tall; lowland to montane forest; Kd, Kl, Tg, Ph, Sl.

119.7.8 **Cryptocarya griffithiana** Wight, **FMP3** 77, **TFM4** 134; tree to 20 m tall; lowland forest; Pk, Ph, Sl, NS, Ml, Jh, Sp.

119.7.9 **Cryptocarya impressa** Miq., **FMP3** 78, **TFM4** 135; tree to 33 m tall; lowland forests and swamps; NS, Ml, Jh.

119.7.10 **Cryptocarya infectoria** Miq., **TFM4** 135; tree to 21 m tall; lowland and hill forest to 600 m; Kd, Kl, Pk, Ph, Sl, NS, Jh.

119.7.11 **Cryptocarya kurzii** Hook.*f.*, **FMP3** 80, **TFM4** 135; *Cryptocarya argentea* Gamble, **FMP3** 81; tree to 21 m, usually smaller; lowland forest; Kd, Tg, Pk, Ph, Ml, Jh.

119.7.12 **Cryptocarya laevigata** Blume, **TFM4** 136; small tree; lowland swamp forest; once from Jh.

119.7.13 **Cryptocarya nitens** (Blume) Koord. & Valeton, **TFM4** 136; *Cryptocarya areolata* Gamble, **FMP3** 80; *Cryptocarya bubongana* Gamble, **FMP3** 81; tree to 27 m tall; lowland riversides; Kd, Tg, Pk, Ph, Sl.

119.7.14 **Cryptocarya rugulosa** Hook.*f.*, **FMP3** 78, **TFM4** 136; tree to 40 m tall; lowland and hill forest; Kd, Pn, Pk, Tg, Ml, Jh, Sp.

119.7.15 **Cryptocarya scortechinii** Gamble, **FMP3** 80, **TFM4** 136; tree to 24 m tall; lowland and montane forest to 1500 m; Pk, Ph, NS.

119.7.16 **Cryptocarya teysmanniana** Miq., **TFM4** 137; tree to 12 m tall; hill forest; Sl, Jh.

119.7.17 **Cryptocarya tomentosa** Blume, **FMP3** 79, **TFM4** 137; tree to 20 m tall; lowland and hill forest to 1000 m; Kd, Pk.

119.7.18 **Cryptocarya wrayi** Gamble, **FMP3** 77, **TFM4** 137; tree to 20 m tall; lower montane forest at 900–1200 m; Kl, Pk, Ph, Jh; endemic.

119.7.19 **Cryptocarya zollingeriana** Miq., **TFM4** 137; *Cryptocarya tenuifolia* Ridl., **FMP3** 81; shrub or small tree to 9 m tall; hill forest; Kl, Sl.

119.8.1 **Dehaasia candolleana** (Meisn.) Kosterm., **TFM4** 138; *Dehaasia cuneata auct. non* (Blume) Blume, **FMP3** 87 in part; small tree; lowland forest; Kd, Pk, NS.

119.8.2 **Dehaasia cuneata** (Blume) Blume, **FMP3** 87 in part, **TFM4** 139; tree to 33 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, NS, Jh.

119.8.3 **Dehaasia incrassata** (Jack) Kosterm., **TFM4** 139; *Dehaasia microcarpa* Blume, **FMP3** 87; tree to 24 m tall; lowland forest by streams; Kl, Pk, Ph, Sl, Ml.

119.8.4 **Dehaasia lancifolia** Ridl., **FMP3** 88, **TFM4** 139; small tree to 8 m tall; montane forest; Pk, Ph; endemic.

119.8.5 **Dehaasia longipedicellata** (Ridl.) Kosterm., **TFM4** 140; tree to 12 m tall; lowland forest; Kl, Tg, Pk, Ph, Sl, NS.

119.8.6 **Dehaasia longipetiolata** Kosterm., **TFM4** 140; tree to 24 m tall; lowland forest; P. Langkawi, Kd, Pn, Tg, Pk, Ph.

119.8.7 **Dehaasia pauciflora** Blume, **TFM4** 140; *Dehaasia curtisii* Gamble, **FMP3** 88; tree to 21 m tall; lowland to montane forest; Pn, Kl, Ph.

119.8.8 **Dehaasia polyneura** (Miq.) Kosterm., **TFM4** 140; *Dehaasia elliptica* Ridl., **FMP5** 329; tree to 33 m tall; lowland forest; Tg, Pk, Ph, Sl, NS.

119.8.9 **Dehaasia tomentosa** (Blume) Kosterm., **TFM4** 141; *Dehaasia cuneata auct. non* (Blume) Blume, **FMP3** 87; tree to 15 m tall; lowland and hill forest; Pk, Ph.

119.9.1 **Endiandra holttumii** M.R. Hend., **H35** 120, **TFM4** 141; tree to 17 m tall; swampy lowland forest; Ph, Jh.

119.9.2 **Endiandra kingiana** Gamble, **FMP3** 89, **TFM4** 142; tree to 33m tall; lowland forest; Kl, Pk, NS, Jh.

119.9.3 **Endiandra macrophylla** (Blume) Boerl., **TFM4** 142; shrub or small tree to 7 m tall; lowland and hill forest; P. Tioman, Jh.

119.9.4 **Endiandra maingayi** Hook.*f.*, **FMP3** 89, **TFM4** 142; tree to 40 m tall; lowland to montane forest at 1200 m; Kl, Pk, Ph, Sl, NS, Jh; endemic.

119.9.5 **Endiandra praeclara** Gamble, **FMP3** 90, **TFM4** 143; tree to 30 m tall; hill and montane forest at 300–1200 m; Kd, Pk, Ph; endemic.

119.9.6 **Endiandra rubescens** (Blume) Miq., **FMP3** 89, **TFM4** 143; tree to 27 m tall; lowland and hill forest; Tg, Pk, Sl.

119.9.7 **Endiandra scobiculata** Kosterm., **TFM4** 143; tree to 33m tall; montane forest at 1200 m; known only from Fraser's Hill, Ph; endemic.

119.9.8 **Endiandra wrayi** Gamble, **FMP3** 89, **TFM4** 143; tree to 15 m tall; hill forest; Kd, Pk, Sl; endemic.

119.9.9 **Endiandra sp. 1**, **TFM4** 143; tree to 27 m tall; lowland forest; once from Ph.

119.9.10 **Endiandra sp. 2**, **TFM4** 144; tree to 12 m tall; lowland forest; once from Jh.

119.10.1 **Lindera bibracteata** (Nees) Boerl., **FMP3** 136, **TFM4** 145; shrub to 6 m tall; montane forest; Pk, Ph, Jh.

119.10.2 **Lindera caesia** Blume, **FMP3** 136, **TFM4** 145; tree to 15 m tall; montane forest; Pk, Ph, Sl.

119.10.3a **Lindera concinna** Ridl. var. **concinna**, **FMP3** 137, **TFM4** 146; shrub; montane forest; only known from Gg Tahan, Ph; endemic.

119.10.3b **Lindera concinna** Ridl. var. **reticulata** Kochummen, **TFM4** 146; shrub; montane forest; Genting Highlands, Ph, Gg Moyang, Sl; endemic.

119.10.4 **Lindera lucida** (Blume) Boerl., **TFM4** 146; *Lindera malaccensis* Hook.*f*., **FMP3** 133; *Lindera selangorensis* Ridl., **FMP3** 134; tree to 15 m tall; lowland to montane forest; common throughout.

119.10.5 **Lindera montana** Ridl., **FMP3** 135, **TFM4** 146; *Lindera stricta* Ridl., **FMP3** 135; shrub; montane forest at 900–1500 m; Gg Tahan, Ph; endemic.

119.10.6 **Lindera oxyphylla** Hook.*f*., **FMP3** 134, **TFM4** 146; *Lindera polyantha* Boerl., **FMP3** 135; tree to 36 m tall; lowland and hill forest to 750 m; Pn, Pk, Ph, Sl, NS.

119.10.7 **Lindera pipericarpa** (Meisn.) Boerl., **FMP3** 135, **TFM4** 147; tree to 18 m tall; hills and mountains; common and widespread.

119.10.8 **Lindera reticulosa** Kosterm., **TFM4** 148; tree to 27 m tall; montane forest; Cameron Highlands and Fraser's Hill, Ph; endemic.

119.10.9 **Lindera rufa** (Stapf) Gamble, **FMP3** 136, **TFM4** 148; shrub to 2 m tall; montane forest; Pk, Sl.

117.10.10 **Lindera subumbellifera** (Blume) Kosterm., **TFM4** 148; *Lindera caudifolia* Ridl., **FMP3** 135; shrub or small tree to 12 m tall; lowland to montane forest; Pn, Kl, Pk, Ph, Sl.

119.10.11 **Lindera wrayi** Gamble, **FMP3** 134, **TFM4** 148; shrub or small tree to 6 m tall; montane forest; Pk, Ph; endemic.

119.11.1 **Litsea accedens** (Blume) Boerl., **TFM4** 151; *Litsea singaporensis* Gamble, **FMP3** 122; tree to 10 m tall; lowland and hill forest; Jh, Sp.

119.11.2 **Litsea acrantha** Ridl., **FMP3** 123 **TFM4** 151; *Litsea terminalis* Ridl., **FMP5** 330; shrub to 2 m tall; montane forest; Kd, Kl, Ph; endemic.

119.11.3 **Litsea angulata** Blume, **FMP3** 120, **TFM4** 152; tree to 17 m tall; lowland forest; Pk, Sl.

119.11.4 **Litsea artocarpifolia** Gamble, **FMP3** 116, **TFM4** 152; tree to 18 m tall; hill forest; Kd, Pk, Sl.

119.11.5 **Litsea brachystachya** Boerl., **FMP3** 119, **TFM4** 152; tree to 15 m tall; lowland forest; Pk.

119.11.6 **Litsea castanea** Hook.*f.*, **FMP3** 121, **TFM4** 152; *Litsea quercina* Gamble, **FMP3** 121; tree to 33 m tall; lowland to montane forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

119.11.7 **Litsea cinerascens** Ridl., **TFM3** 118, **TFM4** 153; small tree; hill and montane forest at 600–1200 m; P. Langkawi, Kd, Ph, Sl; endemic.

119.11.8 **Litsea claviflora** Gamble, **FMP3** 125, **TFM4** 154; tree to 12 m tall; lowland forest; known only from type, Pk; endemic.

119.11.9 **Litsea cordata** (Jack) Hook.*f.*, **FMP3** 118, **TFM4** 154; tree to 30 m tall; lowland and hill forest; Kl, Tg, Pk, Ph, Sl, Ml, Jh.

119.11.10 **Litsea costalis** (Nees) Kosterm., **TFM4** 154; *Litsea megacarpa* Gamble, **FMP3** 127; tree to 30 m tall; lowland and hill forests to 500 m; Pk, Ph, Sl, Ml, Sp.

119.11.11 **Litsea costata** (Blume) Boerl., **TFM4** 154; *Litsea perakensis* Gamble, **FMP3** 122; *Litsea pustulata* Gamble, **FMP3** 122; *Litsea patellaris* Gamble, **FMP3** 123; *Litsea kunstleri* Gamble, **FMP3** 125; tree to 18 m tall; lowland to montane forest; Pk, Ph.

119.11.12 **Litsea curtisii** Gamble, **FMP3** 127, **TFM4** 155; tree to 42 m tall; lowland and hill forest; Kd, Pn, Pk, Sl, Jh; endemic.

119.11.13 **Litsea cylindrocarpa** Gamble, **FMP3** 121, **TFM4** 155; tree to 42 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Jh.

119.11.14 **Litsea elliptica** Blume, **TFM4** 155; *Litsea petiolata* Hook.*f.*, **FMP3** 119; tree to 45 m tall; mostly in the lowlands; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

119.11.15 **Litsea erectinervia** Kosterm., **TFM4** 156; tree to 30 m tall; lowland forest; Tg, Ph, Sl, Ml, Sp.

119.11.16 **Litsea fenestrata** Gamble, **FMP3** 123, **TFM4** 156; tree to 30 m tall; lowlands including swamps; Tg, Pk.

119.11.17 **Litsea ferruginea** (Blume) Blume, **FMP3** 129, **TFM4** 156; *Litsea griffithii* Gamble, **FMP3** 129; tree to 21 m tall; lowland and hill forest; Pk, Ph, Sl, Jh.

119.11.18 **Litsea firma** (Blume) Hook.*f.*, **FMP3** 116, **TFM4** 156; tree to 42 m tall; lowland forest; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

119.11.19 **Litsea foxiana** Gamble, **FMP3** 123, **TFM4** 157; tree; hill forest; only known from type, Penang Hill; endemic.

119.11.20a **Litsea glutinosa** (Lour.) C.B. Rob. var. **brideliifolia** Merr., **TFM4** 157; tree to 15 m tall; on limestone; only known from Baling, Kd; endemic variety.

119.11.20b **Litsea glutinosa** (Lour.) C.B. Rob. var. **glutinosa**, **TFM4** 157; *Litsea sebifera* Blume, **FMP3** 157; tree to 15 m tall; lowland and hill forest; Kd.

119.11.21 **Litsea gracilipes** Hook.*f.*, **FMP3** 130, **TFM4** 157; tree to 21 m tall; fresh water and peat swamp forest; Pk, Ph, Sl, Jh.

119.11.22 **Litsea gracilis** Gamble, **FMP3** 117, **TFM4** 158; small tree; lowland forest; only known from type, Pk; endemic.

119.11.23 **Litsea grandis** (Wall. *ex* Nees) Hook.*f.*, **FMP3** 115, **TFM4** 158; tree to 30 m tall; lowland and montane forest to 1500 m; P. Langkawi, Kd, Kl, Pk, Ph, Sl, NS, Ml, Jh.

119.11.24 **Litsea helferi** Hook.*f.* var. **ovata** Gamble, **FMP3** 125, **TFM4** 158; tree to 8 m tall; montane forest above 1500 m; Pk, Ph; endemic variety.

119.11.25 **Litsea hirsutior** Kosterm., **K58** 207; tree to 5 m tall; only known from type; Sg Lebir, Kl; endemic.

119.11.26a **Litsea hirsutissima** Gamble var. **geniculata** Gamble, **FMP3** 118, **TFM4** 158; shrub or small tree to 5 m tall; hill forest; only known from type, Pk; endemic variety.

119.11.26b **Litsea hirsutissima** Gamble var. **hirsutissima**, **FMP3** 118, **TFM4** 158; shrub or small tree to 5 m tall; hill forest; Kl, Pk; ?endemic.

119.11.27 **Litsea insignis** (Blume) Boerl., **TFM4** 159; *Litsea glabrifolia* Ridl., **FMP3** 119; tree to 21 m tall; lowland forest; Kd, Ph, Sl.

119.11.28 **Litsea johorensis** Gamble, **FMP3** 114, **TFM4** 159; *Litsea trunciflora* Gamble, **TFM3** 114; tree to 18 m tall; lowland to lower montane forest at 1200 m; Kl, Tg, Pk, Ph, NS, Jh.

119.11.29 **Litsea lanceolata** (Blume) Kosterm., **TFM4** 159; *Litsea sarawacensis* Gamble, **FMP3** 130; shrub or small tree to 7 m tall; lowland to montane forest; Ph, Jh, Sp.

119.11.30a **Litsea lancifolia** (Roxb. *ex* Wall.) Hook.*f.* var. **lancifolia**, **FMP3** 130, **TFM4** 160; small tree to 12 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS, Sp.

119.11.30b **Litsea lancifolia** (Roxb. *ex* Wall.) Hook.*f.* var. **rufa** Gamble, **FMP3** 130, **TFM4** 160; small tree to 12 m tall; lowland forest; Pk, Sl; endemic variety.

119.11.31 **Litsea machilifolia** Gamble, **FMP3** 126 incl. var. *angustifolia* Gamble and var. *montana* Ridl., **TFM4** 160; lowland and montane forest to 1500 m; Pn, Pk, Ph, NS, Ml, Jh, Sp.

119.11.32 **Litsea magnifica** (Miq.) Villar, **FMP3** 115 incl. var. *pahangensis* Ridl., **TFM4** 160; small tree; lowland and hill forest; Pn, Kl, Ph, Ml, Jh.

119.11.33 **Litsea maingayi** Hook.*f.*, **FMP3** 128, **TFM4** 161; tree to 34 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, NS, Ml, Jh.

119.11.34 **Litsea monopetala** (Roxb.) Pers., **TFM4** 161; shrub or small tree to 9 m tall; lowlands near streams; Kl, Ph, Sl.

119.11.35 **Litsea myristicifolia** (Wall. *ex* Nees) Hook.*f.*, **FMP3** 125, **TFM4** 161; tree to 27 m tall; lowland to montane forest; P. Langkawi, Kd, Pn, Tg, Pk, Ph, NS, Ml, Sp.

119.11.36 **Litsea nidularis** Gamble, **FMP3** 127, **TFM4** 161; tree to 30 m tall; lowland and hill forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml.

119.11.37a **Litsea noronhae** Blume var. **hexandra** Gamble, **FMP3** 129, **TFM4** 162; small tree; hill forest; once from Genting Bidai, Sl; endemic variety.

119.11.37b **Litsea noronhae** Blume var. **noronhae**, **FMP3** 128, **TFM4** 162; shrub or small tree to 15 m tall; lowland and hill forest; Kl, Pk, Sl.

119.11.38a **Litsea ochracea** (Blume) Boerl. var. **oblanceolata** (Gamble) Kochummen *ex* I.M. Turner, **TFM4** 162, **T24** 222; *Litsea oblanceolata* Gamble, **FMP3** 125; tree to 28 m tall; swamp forest; Pk, Jh; endemic variety.

119.11.38b **Litsea ochracea** (Blume) Boerl. var. **ochracea**, **FMP3** 124, **TFM4** 162; tree to 28 m tall; lowland and hill forest; Pk, Ph.

119.11.39 **Litsea panamonja** Hook.*f.*, **FMP3** 127, **TFM4** 162; tree to 12 m tall; lowland forest; once each from Pk and Ml.

119.11.40 **Litsea penangiana** Hook.*f.*, **FMP3** 121, **TFM4** 163; shrub or small tree to 9 m tall; hill forest to 1200 m; Kd, Pn, Kl, Pk, Ph; endemic.

119.11.41 **Litsea polyantha** Juss., **FMP3** 118, **TFM4** 163; tree to 18 m tall; lowland and hill forest; Pn, Pk, Ph.

119.11.42 **Litsea resinosa** Blume, **TFM4** 163; *Litsea monticola* Gamble, **FMP3** 124; tree to 30 m tall; lowland swamps to montane forest; Kl, Tg, Pk, Ph, Sl.

119.11.43 **Litsea ridleyi** Gamble, **FMP3** 120; small tree; lowland forest; Sp; ?endemic.

119.11.44 **Litsea robusta** Blume, **FMP3** 129, **TFM4** 163; tree to 36 m tall; low hills; Kd, Tg, Pk, Ph, Sl, NS, Jh, Sp.

119.11.45 **Litsea rubicunda** Kosterm., **TFM4** 164; shrub or small tree to 6 m or more tall; hill and montane forest; Ph, P. Tioman, Sl.

119.11.46 **Litsea scortechinii** Gamble, **FMP3** 124, **TFM4** 164; small tree; only known from type, Pk; endemic.

119.11.47 **Litsea sessiliflora** Hook.*f.*, **FMP3** 131, **TFM4** 164; *Litsea ujongensis* Gamble, **FMP3** 131 incl. var. *nervosa* Gamble; shrub to 3 m tall; lowland and montane forest to 1500 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Jh.

119.11.48a **Litsea spathacea** Gamble var. **spathacea**, **FMP3** 120, **TFM4** 165; shrub or small tree to 15 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, NS, Jh; endemic.

119.11.48b **Litsea spathacea** Gamble var. **tomentosa** Gamble, **FMP3** 120, **TFM4** 165; small tree; hill forest; Pk; endemic.

119.11.49 **Litsea teysmannii** Gamble, **FMP3** 126, **TFM4** 165; tree to 27 m tall; peat swamp forest; Pk, Sl, Ml.

119.11.50 **Litsea tomentosa** Blume, **FMP3** 115, **TFM4** 165; tree to 27 m tall; lowland and hill forest to 750 m; Pn, Pk, Ph, Sl.

119.11.51a **Litsea umbellata** (Lour.) Merr. var. **fuscotomentosa** (Meisn.) Kochummen *ex* I.M. Turner, **TFM4** 166, **T24** 222; *Litsea amara* Blume var. *fuscotomentosa* Meisn., **FMP3** 117; shrub or small tree to 12 m tall; lowland forests; Pn, Tg, Pk, Sl, NS, Jh.

119.11.51b **Litsea umbellata** (Lour.) Merr. var. **umbellata**, **TFM4** 166; *Litsea amara* Blume, **FMP3** 117 incl. vars. *angusta* (Wall. *ex* Nees) Meisn. and *attenuata* Gamble; shrub or small tree to 12 m tall; lowland forests; common throughout.

119.11.52 **Litsea wrayi** Gamble, **FMP3** 122, **TFM4** 166; tree to 25 m tall; lowland and hill forest; Kd, Pk, Sl, NS; endemic.

119.11.53 **Litsea sp. 1**, **TFM4** 166; tree to 18 m tall; lowland and hill forest to 1200 m; Ph, Jh; endemic.

119.11.54 **Litsea sp. 2**, **TFM4** 166; tree to 15 m tall; lower montane forest at 1000 m; once from Fraser's Hill, Ph; ?endemic.

119.11.55 **Litsea sp. 3**, **TFM4** 167; tree to 27 m tall; montane forest; thrice collected, Ph & Jh; ?endemic.

119.11.56 **Litsea sp. 4**, **TFM4** 167; shrub to 3 m tall; montane forest at 1100 m; known only from Gg Belumut, Jh; ?endemic.

119.12.1 **Micropora curtisii** Hook.*f.*, **FMP3** 90; *Hexapora curtisii* Hook.*f.*, **TFM4** 144; tree to 18 m tall; hill forest at 300 m; only known from Penang Hill; endemic.

119.13.1 **Neolitsea coccinea** B.C. Stone, **TFM4** 168; shrub to 3 m tall; montane forest at 1600 m; only known from Gg Ulu Kali, Ph; endemic.

119.13.2 **Neolitsea kedahensis** Gamble, **FMP3** 132, **TFM4** 168 '*kedahense*'; shrub or small tree to 6 m tall; montane forest at 1000 m; only known from Gg Jerai, Kd; endemic.

119.13.3 **Neolitsea mollissima** Gamble, **FMP3** 132, **TFM4** 168; small tree; montane forest at 1000 m; known only from type, Gg Batu Puteh, Pk; endemic.

119.13.4 **Neolitsea villosa** (Blume) Merr., **FMP3** 132, **TFM4** 168; tree to 18 m tall; montane forest at 1200 m; Pk, Ph.

119.13.5 **Neolitsea zeylanica** (Nees) Merr., **FMP3** 132, **TFM4** 169; shrub or small tree; lowland and hill forest to 1000 m; throughout.

119.13.6 **Neolitsea sp. 1**, **TFM4** 169; shrub or small tree to 9 m tall; montane forest at about 1000 m; Fraser's Hill & Gg Tapis, Ph; endemic.

119.14.1 **Nothaphoebe condensa** Ridl., **FMP3** 102, **TFM4** 170; tree; once from P. Langkawi; endemic.

119.14.2 **Nothaphoebe coriacea** (Kosterm.) Kosterm., **TFM4** 170; tree to 36 m tall; peat swamp forest; Tg, Ph, Sl.

119.14.3a **Nothaphoebe kingiana** Gamble var. **glabrescens** Gamble, **FMP3** 102, **TFM4** 171; tree to 30 m tall; swampy lowland forest; Pk, Jh; endemic.

119.14.3b **Nothaphoebe kingiana** Gamble var. **kingiana**, **FMP3** 101, **TFM4** 171; tree to 30 m tall; lowland forest; Kd, Pk, Ph; endemic.

119.14.4 **Nothaphoebe pahangensis** Kosterm., **TFM4** 171; tree to 24 m tall; montane forest at about 1200 m; only known from Cameron Highlands, Ph; endemic.

119.14.5 **Nothaphoebe panduriformis** (Hook.*f.*) Gamble, **FMP3** 102, **TFM4** 171; tree to 24 m tall; lowland and hill forest to 600 m; Kd, Pk, Ph, Sl, NS, Ml, Jh.

119.14.6 **Nothaphoebe umbelliflora** Blume, **FMP3** 101, **TFM4** 172; tree to 33 m tall; lowland to lower montane forest at 1200 m; Pn, Kl, Pk, Ph, Sl, NS, Jh, Sp.

119.15.1 **Persea declinata** (Blume) Kosterm., **TFM4** 173; *Phoebe declinata* Nees, **FMP3** 104; tree to 30 m tall; lowland to montane forest at 1300 m; Pn, Kl, Tg, Ph, Sl, Sp.

119.15.2 **Persea fruticosa** (Kurz) Kosterm., **TFM4** 173; *Nothaphoebe angustifolia* Ridl., **FMP3** 103; shrub or small tree to 9 m tall; montane forest at 1000 m and above; Kd, Ph.

119.15.3 **Persea sp. nov. 1, TFM4** 174; tree to 18 m tall; lowland heath and montane forest; Kl, Ph.

119.15.4 **Persea sp. nov. 2, TFM4** 174; small tree to 7 m tall; montane forest above 1200 m; once each from Fraser's Hill and Cameron Highlands, Ph; endemic.

119.15.5 **Persea sp. nov. 3, TFM4** 174; tree to 24 m tall; montane forest; Kd, Ph; endemic.

119.15.6 **Persea sp. nov. 4, TFM4** 174; tree to 30 m tall; montane forest; twice from Cameron Highlands, Ph; endemic.

119.15.7 **Persea sp. nov. 5, TFM4** 174; shrub to 3 m tall; river banks; only known from Sg Tahan, Ph; endemic.

119.15.8 **Persea sp. nov. 6, TFM4** 175; tree to 9 m tall; lowland forest; twice from Ph; endemic.

119.16.1 **Phoebe elliptica** Blume, **TFM4** 176; *Phoebe macrophylla* Blume, **FMP3** 105; tree to 27 m tall; lowland and hill forest to 900 m; Pk, Ph, Sl, NS.

119.16.2 **Phoebe grandis** (Nees) Merr., **TFM4** 176; *Phoebe kunstleri* Gamble, **FMP3** 105; *Phoebe opaca* Blume, **FMP3** 105 incl. var. *cuspidata* Gamble; *Phoebe cuneata* Blume, **FMP3** 106; tree to 21 m tall; lowland to montane forest; throughout.

119.16.3 **Phoebe lanceolata** (Wall. *ex* Nees) Nees, **FMP3** 104, **TFM4** 176; shrub or small tree to 9 m tall; lowland riverbanks; Kl, Tg, Ph, Sl.

119.16.4 **Phoebe scortechinii** (Gamble) Kochummen, **TFM4** 177; *Machilus scortechinii* Gamble, **FMP3** 103; tree to 15 m tall; montane forest; only known from Maxwell's Hill, Pk; endemic.

119.16.5 **Phoebe tavoyana** (Meisn.) Hook.*f.*, **FMP3** 104 incl. var. *villosa* Ridl., **TFM4** 178; tree to 14 m tall; lowland forest; P. Langkawi, Kd, Kl, Pk.

119.16.6 **Phoebe sp. A, TFM4** 178; tree to 33 m tall; montane forest at about 1350 m; once each from Fraser's Hill & Gg Ulu Kali, Ph; ?endemic.

120. LECYTHIDACEAE

120.1.1 **Abdulmajidia chaniana** Whitmore, **W12** 209; *Lecythidacea sp. A*, **TFM2** 266; small tree about 10 m tall; lowland forest to 570 m; Bt Chini, Ph, Gg Pulai, Jh; endemic.

120.1.2 **Abdulmajidia maxwelliana** Whitmore, **W12** 210; *Lecythidacea sp. B*, **TFM2** 266; small tree about 10 m tall; lower montane forest at about 600 m; Maxwell's Hill, Pk; endemic.

120.2.1a **Barringtonia acutangula** (L.) Gaertn. ssp. **acutangula**, **P14** 228, **TFM2** 259; *Barringtonia pedicellata* Ridl., **FMP1** 759; shrub or small tree to 13 m tall; lowland forest, usually near rivers; Kd, Tg, Pk, Ph, Jh.

120.2.1b **Barringtonia acutangula** (L.) Gaertn. ssp. **spicata** (Blume) Payens, **P14** 231, **TFM2** 259; *Barringtonia spicata* Blume, **FMP1** 759; shrub or small tree to 13 m tall; lowland forest near rivers or the sea; Ml and Ph northward.

120.2.2 **Barringtonia asiatica** (L.) Kurz, **P14** 184, **TFM2** 258; *Barringtonia speciosa* J.R. Forst. & G. Forst., **FMP1** 756; tree to 20 m tall or more; sandy shores; all coasts.

120.2.3 **Barringtonia conoidea** Griff., **FMP1** 757, **P14** 189, **TFM2** 258; sparsely branching shrub or small tree to 4 m tall; tidal estuaries; commoner on the west coast.

120.2.4 **Barringtonia corneri** Kiew & K.M. Wong, **K49** 457; monopodial treelet to 10 m tall; swampy lowland forest; Jh; endemic.

120.2.5 **Barringtonia filirachis** Payens, **P14** 188, **TFM2** 259; small tree about 8 m tall; swampy lowland forest; S.E. Jh.

120.2.6 **Barringtonia fusiformis** King, **FMP1** 759, **P14** 240, **TFM2** 259; shrub or small tree to 8 m tall; lowland forest often near rivers; Pk to Jh; endemic.

120.2.7 **Barringtonia macrocarpa** Hassk., **P14** 237, **TFM2** 259; shrub or small tree to 6 m tall; lowland forest near rivers; widely scattered.

120.2.8 **Barringtonia macrostachya** (Jack) Kurz, **FMP1** 758, **P14** 244, **TFM2** 260; tree to 20 m tall; lowland forest, rarely in the mountains; throughout.

120.2.9 **Barringtonia pauciflora** King, **FMP1** 757, **P14** 243, **TFM2** 260; small tree to 13 m tall; hill forest; once from Larut, Pk.

120.2.10 **Barringtonia payensiana** Whitmore, **TFM2** 259; small tree; lowland forest; once each from P. Pangkor, Pk, and Ulu Batang Kali, Sl; endemic.

120.2.11 **Barringtonia pendula** (Griff.) Kurz, **P14** 248, **TFM2** 261; *Barringtonia musiformis* King, **FMP1** 758; tree to 33 m tall; lowland forest to 500 m; throughout.

120.2.12 **Barringtonia racemosa** (L.) Spreng., **FMP1** 757, **P14** 192, **TFM2** 259; shrub or tree to 20 m tall; periodically flooded forest; widespread.

120.2.13 **Barringtonia revoluta** Merr., **P14** 199, **TFM2** 259; tree; lowland forest; Ph, Jh.

120.2.14 **Barringtonia reticulata** (Blume) Miq., **P14** 252, **TFM2** 260; *Barringtonia sumatrana* Miq., **FMP1** 758; shrub or small tree to 10 m tall; sandy shores and tidal creeks; Pk, Jh, Sp.

120.2.15 **Barringtonia scortechinii** King, **FMP1** 757, **P14** 233, **TFM2** 262; tree to 21 m tall; lowland and hill forest to 1200 m; throughout.

120.3.1 **Careya arborea** Roxb., **FMP1** 760, **TFM2** 264; tree to 12 m tall; open sandy country; Ps, P. Langkawi, Kd.

120.4.1 **Planchonia grandis** Ridl., **FMP1** 760, **TFM2** 264; tree to 36 m tall; lowland and hill forest to 600 m; Kd, Kl, Pk, Jh, Sp.

120.4.2 **Planchonia valida** (Blume) Blume, **FMP1** 760, **TFM2** 264; tree to 30 m tall; lowlands; Kl, Pk, Ph.

121. LEEACEAE

121.1.1 **Leea aequata** L., **FMP1** 486, **FMı7** 775, **TFM4** 481; *Leea robusta auct. non* Roxb., **FMP1** 486; shrub; lowland forest; Kd, Pk.

121.1.2 **Leea angulata** Korth. *ex* Miq., **FMP1** 485, **FMı7** 772, **TFM4** 481; tree to 7 m tall; open sandy places; Kl, Pk, Ph, Sl, NS, Sp.

121.1.3 **Leea curtisii** King, **FMP1** 485, **FMı7** 773, **TFM4** 481; shrub to 3 m tall; lowland forest; Pk, Ph.

121.1.4 **Leea guineensis** G. Don, **FMı7** 777, **TFM4** 481; small shrub; lowland forest; Kl, Ph, Sl, Jh.

121.1.5 **Leea indica** (Burm.*f.*) Merr., **FMı7** 779, **TFM4** 482; *Leea gigantea* Griff., **FMP1** 484; *Leea sambucina* Willd., **FMP1** 484; *Lee sundaica* Miq., **FMP1** 485; *Leea javanica auct. non* Blume, **FMP1** 486; tree to 10 m tall; lowland forest, particularly secondary regrowth; throughout.

121.1.6 **Leea rubra** Blume *ex* Spreng., **FMP1** 485, **FMı7** 776, **TFM4** 482; shrub to 2 m tall; lowland forest; Ps, Kd, Pn, Kl.

121.1.7 **Leea saxatilis** Ridl., **FMP1** 486, **FMı7** 777, **C14** 172, **TFM4** 482; shrub to 1.5 m tall; mostly on limestone; P. Langkawi, Pk, Ph, Sl; endemic.

121.1.8 **Leea simplicifolia** Zoll. & Moritzi, **FMP1** 483, **FMı7** 766, **TFM4** 482; *Leea pauciflora* King, **FMP2** 483; shrub to 1 m tall; lowland forest; Kl, Pk.

122. LEGUMINOSAE

122.1.1 **Abrus precatorius** L., **FMP1** 558; vine; hedges and thickets often near the sea; widespread.

122.1.2a **Abrus pulchellus** Thwaites ssp. **mollis** (Hance) Verdc., **V37** 248; *Abrus mollis* Hance, **H35** 99; vine; on limestone; once from Gua Nangka, Kl.

122.1.2b **Abrus pulchellus** Thwaites ssp. **pulchellus**, **FMP1** 558; vine; hedges inland; Pk, Ph, Sl, NS.

122.2.1 **Acacia auriculiformis** A. Cunn. *ex* Benth., **FMı11** 58; spreading tree to 28 m tall; waste places and secondary forest; throughout; naturalized from tropical Australia.

122.2.2 **Acacia concinna** (Willd.) DC., **FMı11** 48; *Acacia pennata auct. non* (L.) Willd., **FMP1** 657; erect or scrambling shrub or woody climber; lowland forest margins; commoner in the north.

122.2.3 **Acacia farnesiana** (L.) Willd., **FMP1** 636, **FMı11** 44; shrub or small tree to 4 m tall; open sandy places; Pn, Ph, Sl; naturalized from tropical America.

122.2.4 **Acacia kekapur** I.C. Nielsen, **FMı11** 50; *Acacia pseudointsia auct. non* Miq., **FMP1** 657 in part; scandent shrub or woody climber; lowland forest, often in secondary forest; Sp.

122.2.5 **Acacia mangium** Willd., **FMı11** 59; tree to 27 m tall; much planted for timber, but escaping with increasing regularity; native to Queensland and New Guinea.

122.2.6 **Acacia pseudointsia** Miq., **FMP1** 657 in part, **FMı11** 55; straggling shrub or woody climber to 40 m long; lowland and hill forest to 1000 m, often along rivers.

122.3.1 **Adenanthera malayana** Kosterm., **FMı11** 170; *Adenanthera bicolor auctt. non* Moon, **FMP1** 654, **TFM1** 276; tree sometimes to 45 m tall; lowland and hill forest to 900 m, often planted; widespread but scattered.

122.3.2 **Adenanthera marina** I.C. Nielsen, **FMı11** 172; shrub to 3 m tall; sandy beaches; Tg, Ph; endemic.

122.3.3 **Adenanthera pavonina** L., **FMP1** 653, **TFM1** 276, **FMı11** 173; tree 25–40 m tall; lowland forest, usually near the sea; often planted; wild on East Coast and offshore islands.

122.4.1 **Aeschynomene americana** L., **R32** 165, **T05** 130; herb to 2 m tall; waste ground; Sp; naturalized from tropical America.

122.4.2 **Aeschynomene aspera** L., **FMP1** 602, **R32** 162; erect herb to 2 m tall; wet spots; Ml.

122.4.3 **Aeschynomene indica** L., **FMP1** 602, **R32** 163, **M47** 326; erect herb to 2.5 m tall; damp open places, waste ground; widespread, naturalized from South America.

122.5.1 **Aganope heptaphylla** (L.) Polhill, **P21** 268; *Derris sinuata* Benth. *ex* Thwaites, **FMP1** 594; *Derris heptaphylla* (L.) Merr., **K09** 34; scandent shrub; tidal riverbanks, coastal areas; widespread.

122.5.2 **Aganope thyrsiflora** (Benth.) Polhill, **P21** 268; *Derris thyrsiflora* (Benth.) Benth., **FMP1** 594; scandent shrub; common in open country, forest margins; widespread.

122.6.1 **Albizia lebbeck** (L.) Benth., **FMP1** 658, **TFM1** 279, **FMı11** 75; tree to 30 m tall; open sandy places, also cultivated; Ps, Kd; naturalized from continental Asia or Africa.

122.6.2 **Albizia myriophylla** Benth., **FMP1** 658, **TFM1** 277, **FMı11** 77; scandent shrub or woody climber; lowland forest margins and open sites; Ps, Kd, Kl, Tg, Pk, Ph.

122.6.3 **Albizia pedicellata** Baker *ex* Benth., **FMP1** 659, **TFM1** 279, **FMı11** 78; tree to 33 m tall; lowland forest; Kd, Pn, Pk, Ph, Sl.

122.6.4 **Albizia retusa** Benth., **TFM1** 280, **FMı11** 80; *Albizia littoralis* Teijsm. & Binn., **FMP1** 659; tree to 25 m tall; sandy beaches on offshore islands; Pn, P. Tioman, Sp.

122.6.5 **Albizia saponaria** (Lour.) Blume *ex* Miq., **TFM1** 280, **FMı11** 82; tree to 15 m tall; secondary forest near the sea; only known from Kuala Selangor, Sl.

122.6.6 **Albizia splendens** Miq., **FMı11** 83; *Pithecellobium confertum* Benth., **FMP1** 661; *Pithecellobium splendens* (Miq.) Corner, **TFM1** 287; big tree sometimes in excess of 30 m tall; lowland and hill forest to 700 m; scattered throughout.

122.7.1 **Alysicarpus vaginalis** (L.) DC., **FMP1** 604, **V10** 87; *Alysicarpus nummularifolius* (Willd.) DC., **FMP1** 604; prostrate or ascending herb to 60 cm tall; dry grassy places; throughout.

122.8.1 **Archidendron bubalinum** (Jack) I.C. Nielsen, **FMı11** 96; *Pithecellobium bubalinum* (Jack) Benth., **FMP1** 661, **TFM1** 284; tree to 20 m tall; lowland forest, often in belukar; widespread.

122.8.2a **Archidendron clypearia** (Jack) I.C. Nielsen ssp. **clypearia** var. **casai** (Blanco) I.C. Nielsen, **FMı11** 98; *Pithecellobium clypearia* (Jack) Benth., **FMP1** 664 in part, **TFM1** 284 in part; *Pithecellobium angulatum* Benth., **FMP1** 664 in part; shrub or tree to 22 m tall; montane forest.

122.8.2b **Archidendron clypearia** (Jack) I.C. Nielsen ssp. **clypearia** var. **clypearia**, **FMı11** 98; *Pithecellobium clypearia* (Jack) Benth., **FMP1** 664 in part, **TFM1** 284 in part; *Pithecellobium angulatum* Benth., **FMP1** 664 in part; shrub or tree to 22 m tall; lowland forest to 1200 m; widespread.

122.8.2c **Archidendron clypearia** (Jack) I.C. Nielsen ssp. **clypearia** var. **sessiliflorum** (Merr.) I.C. Nielsen, **FMı11** 99; *Pithecellobium cuneadenum* Kosterm., **TFM1** 285; shrub or tree to 22 m tall; lowland forest to 1200 m; only known from Fraser's Hill, Ph.

122.8.3 **Archidendron contortum** (Martelli) I.C. Nielsen, **FMi11** 100; *Pithecellobium contortum* Martelli, **FMP1** 664, **TFM1** 285; shrub or small tree to 10 m tall; common in secondary forest, usually near the sea; widespread.

122.8.4 **Archidendron ellipticum** (Blume) I.C. Nielsen, **FMi11** 100; *Pithecellobium ellipticum* (Blume) Hassk., **FMP1** 662, **TFM1** 286; tree to 20 m tall; lowland forest including belukar; widespread.

122.8.5 **Archidendron globosum** (Blume) I.C. Nielsen, **FMi11** 104; *Pithecellobium affine* Baker *ex* Benth., **FMP1** 662; *Pithecellobium globosum* (Blume) Kosterm., **TFM1** 286; tree to 30 m tall; lowland and hill forest; Pk southward.

122.8.6 **Archidendron jiringa** (Jack) I.C. Nielsen, **FMi11** 106; *Pithecellobium lobatum* Benth., **FMP1** 661; *Pithecellobium jiringa* (Jack) Prain, **TFM1** 286; shrub or tree to 21 m tall; lowland forests, often cultivated; widespread.

122.8.7 **Archidendron kunstleri** (Prain) I.C. Nielsen, **FMi11** 107; *Pithecellobium kunstleri* Prain, **FMP1** 662, **TFM1** 287; shrub or tree to 15 m tall; often swampy, lowland forest; Pk, Ph, Jh.

122.8.8 **Archidendron microcarpum** (Benth.) I.C. Nielsen, **FMi11** 109; *Pithecellobium microcarpum* Benth., **FMP1** 663, **TFM1** 287; small tree to 15 m tall; lowland, often secondary, forest; widespread.

122.8.9 **Archidendron pahangense** (Kosterm.) I.C. Nielsen, **FMi11** 110; *Pithecellobium pahangense* Kosterm., **TFM1** 287; tree to 25 m tall; lower montane forest at 600–1500 m; Ph, Sl; endemic.

122.9.1 **Bauhinia acuminata** L., **FMP1** 625, **D19** 393, **FMi12** 444; shrub about 3 m tall; doubtfully wild.

122.9.2 **Bauhinia andersonii** K. Larsen & S. Larsen, **L03** 330, **FMi12** 463; tendrilled woody climber; limestone hills; Kl, Ph; endemic.

122.9.3 **Bauhinia audax** (de Wit) G. Cusset, **C35** 278, **FMi12** 464; *Bauhinia calycina* (*non* Pierre) Ridl., **FMP1** 626; *Phanera audax* de Wit, **D19** 441; tendrilled woody climber; lowland forest; Sl, NS, Ml, Jh; endemic.

122.9.4 **Bauhinia bassacensis** Pierre *ex* Gagnep., **FMi12** 464; *Bauhinia bracteata auct. non* Grah. *ex* Baker, **FMP1** 634; *Phanera bassacensis* (Pierre *ex* Gagnep.) de Wit, **D19** 472; climber; lowland and hill forest; Kd, Kl.

122.9.5a **Bauhinia bidentata** Jack var. **bidentata**, **FMP1** 629, **FMi12** 508; *Bauhinia scortechinii* Prain, **FMP1** 631; *Phanera bidentata* (Jack) Benth., **D19** 495; large woody climber; montane forest at 900–1500 m; Pn, Pk, Ph, Sl, NS; endemic.

122.9.5b **Bauhinia bidentata** Jack var. **breviflora** (Ridl.) K. Larsen & S. Larsen, **L05** 663, **FMi12** 508; *Bauhinia breviflora* Ridl., **FMP5** 306; tendrillous climber; lowland forest; widespread; endemic variety.

122.9.5c **Bauhinia bidentata** Jack var. **cornifolia** (Baker) Bennet, **L05** 663, **FMı12** 509; *Bauhinia cornifolia* Baker, **FMP1** 629; *Phanera bidentata* (Jack) Benth. ssp. *bicornuta* (Miq.) de Wit var. *cornifolia* (Baker) de Wit, **D19** 500; lofty climber; hill forest; Kl, Pn, Pk, Ph, Sl, NS; endemic variety.

122.9.5d **Bauhinia bidentata** Jack var. **fraseri** (de Wit) K. Larsen & S. Larsen, **L05** 663, **FMı12** 509; *Phanera bidentata* (Jack) Benth. ssp. *bidentata* var. *fraseri* de Wit, **D19** 497; climber; lower montane forest 1200–1500 m; Gg Bujong Malacca, Pk, Fraser's Hill and Cameron Highlands, Ph; endemic variety.

122.9.5e **Bauhinia bidentata** Jack var. **monticola** (Ridl.) K. Larsen & S. Larsen, **L05** 663, **FMı12** 510; *Bauhinia monticola* Ridl., **FMP1** 630; climber; hill forest at about 1500 m; Pk, Sl; endemic variety.

122.9.6 **Bauhinia cuprea** Ridl., **FMP1** 630, **FMı12** 512; *Phanera cuprea* (Ridl.) de Wit; **D19** 503; climber; hill forest; only known from Gg Keladang, Pk; endemic.

122.9.7 **Bauhinia curtisii** Prain, **FMP1** 633, **FMı12** 499; *Lasiobema curtisii* (Prain) de Wit, **D19** 424; woody climber; usually on limestone; P. Langkawi, Kd, Pk.

122.9.8 **Bauhinia decumbens** M.R. Hend., **H33** 99, **FMı12** 513; *Phanera decumbens* (M.R. Hend.) de Wit, **D19** 503; scrambling shrub; on limestone; only known from type, Gg Senyum, Ph; endemic.

122.9.9a **Bauhinia ferruginea** Roxb. var. **ferruginea**, **FMP1** 628, **FMı12** 475; *Bauhinia hullettii* Prain, **FMP1** 627; *Phanera ferruginea* (Roxb.) Benth., **D19** 453; large tendrillous climber; lowland and hill forest; Tg, Pn; Pk; Sl.

122.9.9b **Bauhinia ferruginea** Roxb. var. **griffithiana** (Benth.) Baker, **FMı12** 475; *Bauhinia griffithiana* (Benth.) Prain, **FMP1** 628; *Phanera griffithiana* Benth., **D19** 455; climber or scandent shurb; lowland forest; Kd, Pn, Pk, Ph, Sl, Ml, Jh.

122.9.10 **Bauhinia finlaysoniana** (Grah. *ex* Benth.) Baker, **FMP1** 632, **FMı12** 514; *Phanera finlaysoniana* Grah. *ex* Benth., **D19** 505; large climber; lowland and hill forest; Pn, Pk.

122.9.11 **Bauhinia flava** (de Wit) G. Cusset, **C35** 278, **FMı12** 500; *Lasiobema flavum* de Wit, **D19** 425; woody climber; on limestone; Ps, P. Langkawi; endemic.

122.9.12 **Bauhinia franckii** K. Larsen & S. Larsen, **L04** 633, **FMı12** 518; large-tendrilled liana; lower montane forest; only known from Fraser's Hill, Ph; endemic.

122.9.13 **Bauhinia glabrifolia** (Benth.) Baker var. **maritima** K. Larsen & S. Larsen; **FMP1** 634, **FMı12** 476; *Phanera glabrifolia* Benth., **D19** 486; slender climber to 25 m long; hill forest; Pn, Pk.

122.9.14 **Bauhinia glauca** (Wall. *ex* Benth.) Benth., **FMP1** 629, **FMi12** 478; *Bauhinia micrantha* Ridl., **FMP1** 633; *Phanera glauca* Wall. *ex* Benth., **D19** 489; liana or climbing shrub; on rocks or climbing in lowland forest; Ps, Kd, Pk, Ph, Sl.

122.9.15 **Bauhinia hirsuta** Weinm., **D19** 399, **FMi12** 449; *Bauhinia mollissima auct. non* Wall. *ex* Prain, **FMP1** 626 in part; erect shrub 1–3 m tall; open country; north of Malaya.

122.9.16 **Bauhinia integrifolia** Roxb., **FMP1** 631, **FMi12** 480; *Bauhinia flammifera* Ridl., **FMP1** 631; *Phanera integrifolia* (Roxb.) Benth., **D19** 478; large climber; lowlands to mountains at 1200 m; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh.

122.9.17 **Bauhinia kingii** Prain, **FMP1** 632, **FMi12** 521; *Phanera bidentata* (Jack) Benth. ssp. *bidentata* var. *kingii* (Prain) de Wit, **D19** 498; slender climber; hill forest; Pk, Ph, Sl; endemic.

122.9.18 **Bauhinia kockiana** Korth., **FMP5** 306 '*kochiana*', **FMi12** 522; *Phanera kockiana* (Korth.) Benth., **D19** 521; tendrilled liana to 30 m tall; lowland and hill forest; Ph, Jh.

122.9.19 **Bauhinia lucida** (Miq.) Prain, **FMP1** 630, **FMi12** 527; *Phanera lucida* Miq., **D19** 511; large climber or creeper to more than 30 m long; lowland forest; Pn, Pk.

122.9.20a **Bauhinia pottsii** G. Don var. **mollissima** (Wall. *ex* Prain) K. Larsen & S. Larsen, **FMi12** 451; *Bauhinia mollissima* Wall. *ex* Prain, **FMP1** 626; climbing shrub; lowlands; West Coast south to Ml.

122.9.20b **Bauhinia pottsii** G. Don var. **pottsii**, **D19** 402, **FMi12** 451; slender climbing shrub to 30 m long; forest margins and river banks in the lowlands; Kd, Pn, Pk.

122.9.20c **Bauhinia pottsii** G. Don var. **subsessilis** (Craib) de Wit, **D19** 406, **FMi12** 452; climbing or straggling shrub; lowlands; Kangar, Ps.

122.9.21 **Bauhinia praesignis** Ridl., **FMP5** 305, **FMi12** 489; *Phanera praesignis* (Ridl.) de Wit, **D19** 444; woody climber; lowland forest; Ph, NS; endemic.

122.9.22 **Bauhinia ridleyi** Prain, **FMP1** 628, **FMi12** 490; *Phanera dasycarpa* Miq. var. *ridleyi* (Prain) de Wit, **D19** 450; strong shrubby climber to 8 m tall; lowland forest; Kd, Kl, Pn, Pk.

122.9.23 **Bauhinia semibifida** Roxb., **FMP1** 627, **FMi12** 490; *Phanera semibifida* (Roxb.) Benth., **D19** 465; scandent shrub or liana; lowland and hill forest; Tg, Sp.

122.9.24 **Bauhinia strychnoidea** Prain *ex* King, **FMP1** 633, **FMi12** 533; *Lasiobema strychnoideum* (Prain *ex* King) de Wit, **D19** 429; woody climber to 30 m long; often, but not exclusively, on limestone; Kl, Pk, Ph, Sl, NS; endemic.

122.9.25a **Bauhinia wrayi** Prain var. **cancellata** (Ridl.) K. Larsen & S. Larsen, **L05** 662, **FMi12** 530; *Phanera wrayi* (Prain) de Wit var. *cancellata* (Ridl.) de Wit, **D19** 518; climbing shrub; hill forest; only known from Gg Angsi, NS; endemic variety.

122.9.25b **Bauhinia wrayi** Prain var. **wrayi**, **FMP1** 632, **FMi12** 530; *Phanera wrayi* (Prain) de Wit var. *wrayi*, **D19** 517; woody creeper or straggling shrub; lowland forest; Pk.

122.9.26 **Bauhinia sp.**; *Lasiobema* sp. nov. A, **D19** 430; climber; Ps, P. Langkawi; endemic.

122.10.1 **Burkilliodendron album** (Ridl.) Sastry, **S02** 243; *Burkillia alba* Ridl., **FMP5** 305; shrub to 1 m tall; Pk; endemic.

122.11.1 **Caesalpinia andamanica** (Prain) Hattink, **H25** 15, **FMi12** 539; *Mezoneuron kunstleri* Prain, **FMP1** 647; big prickly liana to 20 m tall; lowland forest margins to 500 m; Ps, Pk.

122.11.2 **Caesalpinia bonduc** (L.) Roxb., **FMP1** 649, **H25** 17, **FMi12** 541; *Caesalpinia bonducella* (L.) Fleming, *nom. illeg.*, **FMP1** 649; prickly liana to 15 m tall; often coastal but also found inland; widespread.

122.11.3 **Caesalpinia crista** L., **H25** 20, **FMi12** 542; *Caesalpinia nuga* (L.) Ait., **FMP1** 650; prickly liana to 15 m tall; sandy beaches, back mangrove and on limestone; widespread.

122.11.4 **Caesalpinia cucullata** Roxb., **H25** 22, **FMi12** 543; prickly climber; P. Langkawi.

122.11.5 **Caesalpinia decapetala** (Roth) Alston, **H25** 24, **FMi12** 543; *Caesalpinia sepiaria* Roxb., **FMP1** 650; prickly shrub or liana; hill forest margins; once from Penang Hill.

122.11.6 **Caesalpinia digyna** Rottler, **FMP1** 651, **H25** 28, **FMi12** 544; prickly shrub or climber to 10 m; forest fringes and scrub; Ps, Kd. P. langkawi, Pn.

122.11.7 **Caesalpinia parviflora** Prain, **FMP1** 650, **H25** 45, **FMi12** 549; climber or small tree; lowland forest; Pk, Sl, NS.

122.11.8 **Caesalpinia sumatrana** Roxb., **H25** 55, **FMi12** 553, *Mezoneuron sumatranum* (Roxb.) Wight & Arn. *ex* Miq., **FMP1** 647; prickly liana climbing to 20 m high; lowland and hill forest margins; Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

122.11.9 **Caesalpinia tortuosa** Roxb., **FMP1** 651, **H25** 57, **FMi12** 555; prickly climber or shrub to 10 m tall; lowland forest; Pn, Jh, Sp.

122.12.1 **Cajanus cajan** (L.) Millsp., **V04** 65; shrub to 4 m tall; naturalized from India.

122.12.2 **Cajanus crassus** (Prain *ex* King) van der Maesen, **V04** 105; *Atylosia crassa* Prain *ex* King, **FMP1** 564; twining climber; open country; Ps.

122.12.3 **Cajanus goensis** Dalzell, **V04** 117; climber; forest margins; P. Langkawi.

122.12.4 **Cajanus scarabaeoides** (L.) Thouars, **V04** 189; *Atylosia scarabaeoides* (L.) Benth., **FMP1** 564; slender twining vine; sandy shores; once from Pulau Besar, Ml.

122.13.1 **Callerya atropurpurea** (Wall.) Schot, **S08** 15; *Adinobotrys atropurpureus* (Wall.) Dunn, **FMP1** 587; *Millettia atropurpurea* (Wall.) Benth., **TFM1** 296; tree to 30 m tall; open country, sometimes planted; widespread.

122.13.2 **Callerya dasyphylla** (Miq.) Schot, **S08** 20; *Padbruggea dasyphylla* Miq., **FMP1** 587 '*Padebruggea*'; *Padbruggea maingayi* (Baker) Dunn, **FMP1** 587 '*Padebruggea*'; *Millettia dasyphylla* (Miq.) Boerl., **TFM1** 298; *Millettia maingayi* Baker, **TFM1** 298; large woody climber; lowland forest; scattered.

122.13.3 **Callerya eriantha** (Benth.) Schot, **S08** 21; *Adinobotrys erianthus* (Benth.) Dunn, **FMP1** 586; *Millettia eriantha* Benth., **TFM1** 298; liana; lowland forest; widespread.

122.14.1 **Calopogonium mucunoides** Desv., **C23** 662, **M28** 288; twining or trailing vine; waste places; Sp; naturalized from tropical America.

122.15.1 **Canavalia cathartica** Thouars, **S03** 158; *Canavalia turgida* Grah. *ex* A. Gray, **FMP1** 573; creeping and climbing vine; thickets near the sea; all coasts.

122.15.2 **Canavalia rosea** (Sw.) DC., **N11** 128, **L24** 101; *Canavalia obtusifolia* (Lam.) DC., **FMP1** 572; *Canavalia maritima* (Aubl.) Thouars, **S03** 163; trailing vine; sandy shores; all coasts.

122.16.1 **Cassia javanica** L. ssp. **nodosa** (Buch.-Ham. *ex* Roxb.) K. Larsen & S. Larsen, **FMı12** 564; *Cassia nodosa* Buch.-Ham. *ex* Roxb., **FMP1** 616, **D18** 223, **TFM1** 247; tree to 25 m tall; lowland forest; middle of Malaya, Ph particularly.

122.17.1 **Centrosema plumieri** (Turp. *ex* Pers.) Benth., **FMP1** 615, **K09** 33, **M28** 304; twining vine; hedges, fences, waste ground; Sp; naturalized from tropical America.

122.17.2 **Centrosema pubescens** Benth., **C26** 662, **M28** 302; slender twining vine; roadsides, waste places; Sp; naturalized from tropical America.

122.18.1 **Chamaecrista leschenaultiana** (DC.) Degener, **FMı12** 566; *Cassia leshenualtiana* DC., **FMP1** 619, **D18** 280; *Chamaecrista nictinans* (L.) Moench. ssp. *patellaria* (Collad.) Irwin & Barneby var. *glabrata* (Vogel) Irwin & Barneby, **I04** 822; herb, sometimes woody at the base, to 1.5 m tall; grassy spots, roadsides; widespread.

122.18.2 **Chamaecrista mimosoides** (L.) Greene, **FMı12** 567; *Cassia mimosoides* L., **FMP1** 619, **D18** 283; herb, sometimes slightly woody, to 1 m tall; weed, grassy spots; widespread; naturalized from continental Asia.

122.19.1 **Christia vespertilionis** (L.*f.*) Bakh.*f.*, **V10** 90, **R07** 177; herb or lax shrub with obdeltoid leaves; weed of dry places; ?Pn, Sl; very rare, possibly native.

122.20.1 **Clitoria laurifolia** Poir., **M28** 307; *Clitoria cajanifolia* (Presl) Benth., **FMP1** 569; shrub to 1.5 m tall; roadsides, waste ground; naturalized from tropical America.

122.20.2 **Clitorea ternatea** L., **FMP1** 569; vine; hedges and fences; widespread; naturalized - origins obscure.

122.21.1 **Codariocalyx gyroides** (Roxb. *ex* Link) Hassk., **O01** 43; *Desmodium gyroides* (Roxb. *ex* Link) DC., **FMP1** 611, **K55** 250; shrub to 3 m tall; lowlands; Pk.

122.22.1 **Crotalaria alata** Buch.-Ham. *ex* G. Don, **FMP1** 560, **D11** 200, **P22** 372; *Crotalaria bialata* Schrank., **K09** 33; subshrub to 60 cm tall; waste places, sandy beaches; Jh, Sp.

122.22.2 **Crotalaria albida** Heyne *ex* Roth, **FMP1** 561, **D11** 200; subshrub to 30 cm tall; roadsides; Sl.

122.22.3 **Crotalaria chinensis** L., **FMP1** 560, **D11** 202; herb to 60 cm tall; on rocks; Pk.

122.22.4 **Crotalaria cleomifolia** Welw. *ex* Bak., **D11** 203, **A14** 57, **P22** 203; much-branched shrub to 4 m tall; Cameron Highlands, Ph (? died out); naturalized from ?tropical Africa.

122.22.5 **Crotalaria cytisoides** Roxb. *ex* DC., **A14** 53 '*cysticoides*'; shrub to 2 m tall; waste places and plantations; naturalized from continental Asia.

122.22.6 **Crotalaria ferruginea** Grah. *ex* Benth., **FMP1** 560, **D11** 203; herb to 60 cm tall; open sandy places; Ph.

122.22.7 **Crotalaria goreensis** Guill. & Perr., **A14** 54, **P22** 104; shrub to 1 m tall; waste places, plantations; naturalized from tropical Africa.

·122.22.8 **Crotalaria incana** L., **FMP1** 562, **D11** 205, **P22** 95; shrub to 120 cm tall; waste places; Pn, Sp; naturalized from tropical America.

122.22.9 **Crotalaria juncea** L., **D11** 206, **P22** 372; erect, laxly branched herb; waste places; Jh, Sp; naturalized from India.

122.22.10 **Crotalaria laburnifolia** L., **FMP1** 563, **D11** 206, **P22** 76; shrub to 120 cm tall; seashores, waste places; Ml; ?naturalized from drier climates.

122.22.11 **Crotalaria micans** Link, **P22** 371; *Crotalaria anagyroides* Kunth, **A14** 56; shrub 2–4 m tall; waste places, plantations; naturalized from tropical America.

122.22.12 **Crotalaria pallida** Aiton, **P22** 184; *Crotalaria saltiana* (*non* Andr.) Prain *ex* King, **FMP1** 562; *Crotalaria mucronata* Desv., **D11** 209, **K09** 34; shrub to 100 cm tall; waste places; widespread; naturalized from Africa.

122.22.13 **Crotalaria quinquefolia** L., **FMP1** 563, **D11** 212; herb to 60 cm tall; waste ground; widespread.

122.22.14 **Crotalaria retusa** L., **FMP1** 561, **D11** 212, **P22** 272; shrub to 120 cm tall; seashores, waste places; widespread.

122.22.15 **Crotalaria semperflorens** Vent., **FMP1** 562, **D11** 213; herb to 1 m tall; roadside weed; widespread.

122.22.16 **Crotalaria sessiliflora** L., **FMP1** 560, **D11** 214; herb to 60 cm tall; open sandy places; Tg.

122.22.16 **Crotalaria spectabilis** Roth, **P22** 373; *Crotalaria sericea* (*non* Burm.*f.*) Retz., **FMP1** 561; herb 1–2 m tall; waste places; scattered; naturalized from Asia.

122.22.17 **Crotalaria uncinella** Lam., **FMP1** 562, **D11** 216, **P22** 166; procumbent herb or subshrub; sandy shores; mostly East Coast.

122.22.18 **Crotalaria verrucosa** L., **FMP1** 561, **D11** 561, **P22** 373; shrub to 60 cm tall; roadside weed; widespread.

122.22.19 **Crotalaria zanzibarica** Benth., **P22** 191; *Crotalaria usaramoensis* Baker *f.*, **A13** 54; herb or shrub to 2 m tall; waste places, plantations; naturalized from East Africa.

122.23.1 **Crudia caudata** Prain, **FMP1** 644, **TFM1** 249, **FMı12** 580; tree to 8 m tall; lowland forest, river banks; Tg, Jh.

122.23.2 **Crudia curtisii** Prain, **FMP1** 644, **TFM1** 249, **FMı12** 581; *Crudia glauca* Prain, **FMP1** 644, **TFM1** 251; tree to 25 m tall; rare in lowland and hill forest; Tg, Pn, Pk, Ph, Sl, Ml; endemic.

122.23.3 **Crudia evansii** Ridl., **FMP1** 645, **TFM1** 251, **FMı12** 583; tree or liana; on limestone; Gg Senyum, Ph.

122.23.4 **Crudia gracilis** Prain, **FMP1** 646, **TFM1** 251, **FMı12** 583; *Crudia brevipes* Ridl., **FMP1** 645, **TFM1** 249; shrub to 2 m tall; swampy lowland forest; once each from Tasek Gelugor, Pn, Taiping, Pk, and Kota Tinggi, Jh.

122.23.5 **Crudia lanceolata** Ridl., **FMP1** 645, **TFM1** 251, **FMı12** 584; tree; sometimes on limestone; P. Langkawi, Sl, Jh.

122.23.6 **Crudia penduliflora** Ridl., **FMP1** 645, **TFM1** 251, **FMı12** 588; tree; one, possibly two, collection from Ml; endemic.

122.23.7 **Crudia scortechinii** Prain, **FMP1** 644, **TFM1** 252, **FMı12** 590; tree to 35 m tall; locally abundant in lowland forest; Pk; endemic.

122.23.8 **Crudia sparei** Whitmore, **TFM1** 252, **FMı12** 591; ?liana; only known from type, Sg Kriang, Pk; endemic.

122.23.9 **Crudia velutina** Ridl., **TFM1** 252, **FMı12** 594; tree to 25 m tall; lowland forest; Tg, Ph, Jh.

122.23.10 **Crudia wrayi** Prain, **FMP1** 646, **TFM1** 252, **FMı12** 596; tree to 6 m tall; swampy lowland forest; Kd, Pk, Jh.

122.23.11 **Crudia sp., TFM1** 253; Rompin, Ph (KEP 80951).

122.24.1 **Cynometra iripa** Kostel., **K54** 21, **TFM1** 254, **FMı12** 603; *Cynometra ramiflora* L. var. *mimosoides* Baker, **FMP1** 635; shrub or small tree to 8 m tall; mainly coastal, but sometimes inland; Ps, Kd, Sl, Ml.

122.24.2 **Cynometra malaccensis** Meeuwen, **K54** 18, **TFM1** 254, **FMı12** 604; *Cynometra inaequifolia* (*non* A. Gray) Baker, **FMP1** 635 '*inaequalifolia*'; tree 20–40 m tall; lowland and hill forest to 600 m; Pk, Ph, Sl, Ml.

122.24.3 **Cynometra ramiflora** L., **FMP1** 635, **K54** 23, **TFM1** 254, **FMı12** 606; bushy-crowned tree to 25 m tall; riverbanks and swamps especially near the coast; widespread.

122.25.1 **Dalbergia candenatensis** (Dennst.) Prain, **T12** 45, **R32** 220; *Dalbergia torta* Grah. *ex* A. Gray, **FMP1** 591; scandent shrub or liana; coastal scrub and mangroves; widespread.

122.25.2 **Dalbergia curtisii** Prain, **FMP1** 589; scandent shrub; lowland and hill forest; Pn, Pk, Ml.

122.25.3 **Dalbergia hullettii** Prain, **FMP1** 590; shrub or treelet; open swampy ground; Sp; ?endemic.

122.25.4 **Dalbergia junghuhnii** Benth., **K09** 34; *Dalbergia scortechinii* Prain, **FMP1** 589; *Dalbergia stercoracea* Maingay, **FMP1** 589; scandent shrub; lowland forests; widespread.

122.25.5 **Dalbergia kunstleri** Prain *ex* King, **FMP1** 592; liana; riverbanks or on limestone; Pk (twice collected); endemic.

122.25.6 **Dalbergia menoeides** Prain, **FMP1** 591; liana; Krian, Pk; endemic.

122.25.7 **Dalbergia parviflora** Roxb., **FMP1** 589; large liana; lowland forest margins; widespread.

122.25.8 **Dalbergia phyllanthoides** Blume, **FMP1** 590; scandent shrub; lowland forest; Pn, Pk.

122.25.9 **Dalbergia pinnata** (Lour.) Prain, **B02** 614, **L24** 62; *Dalbergia tamarindifolia* Roxb., **FMP1** 591; scandent shrub or small tree; open forest near water; Pn, Pk, Ph.

122.25.10 **Dalbergia pseudosissoo** Miq., **R31** 220, **L24** 62; *Dalbergia rostrata* (*non* Hassk.) Grah. *ex* Prain, **FMP1** 590; liana; lowland forest; Sp.

122.25.11 **Dalbergia velutina** Benth., **FMP1** 592; scandent shrub or liana; forest margins; widespread.

122.26.1 **Dendrolobium rugosum** (Prain) Schindl., **O01** 72; *Desmodium rugosum* Prain, **FMP1** 607, **C14** 167; shrub to 2.5 m tall; P. Langkawi.

122.26.2 **Dendrolobium umbellatum** (L.) Benth., **O01** 82; *Desmodium umbellatum* (L.) DC., **FMP1** 607, **K55** 263; shrub 2–3 m tall; muddy and sandy shores; all coasts.

122.27.1 **Derris affinis** Benth., **FMP1** 597; liana; forest; Pn, Pk.

122.27.2a **Derris amoena** Benth. var. **amoena**, **FMP1** 597; liana; lowland forests; Pk.

122.27.2b **Derris amoena** Benth. var. **maingayana** (Baker) Prain, **FMP1** 597; liana; lowland forests; widespread.

122.27.3a **Derris elegans** Grah. *ex* Benth. var. **elegans**, **FMP1** 596, **V39** 319; slender liana; hill and montane forest; Pk, Sl.

122.27.3b **Derris elegans** Grah. *ex* Benth. var. **vestita** (Baker) Prain, **FMP1** 597, **V39** 320; slender liana; hill forest; Pk, Ml.

122.27.4 **Derris elliptica** (Roxb.) Benth., **FMP1** 597, **V39** 320; scrambling shrub; on rocks, formerly often cultivated; Ps, Pn.

122.27.5 **Derris malaccensis** Prain, **FMP1** 598, **V39** 322; scandent shrub; lowland forests; widespread.

122.27.6 **Derris microphylla** (Miq.) B.D. Jacks., **R32** 234; *Derris dalbergioides* Baker, **FMP1** 595, **TFM1** 290; small tree to 12 m tall; secondary forest particularly in the mountains; NS northward.

122.27.7 **Derris scandens** (Roxb.) Benth., **FMP1** 595, **R32** 230; large high-climbing liana; lowland forest often near the sea; P. Langkawi, Pn, Sp.

122.27.8 **Derris trifoliata** Lour., **V39** 326, **R32** 232; *Derris uliginosa* (Roxb. *ex* Willd.) Benth., **FMP1** 595; slender liana; mangrove swamps; widespread.

122.27.9 **Derris yappii** Craib, **FMP1** 598; liana; once from Kuala Aring, Kl; endemic.

122.28.1 **Desmanthus virgatus** (L.) Willd., **FMı11** 213; shrub; waste ground; Sp; naturalized.

122.29.1 **Desmodium adscendens** (Sw.) DC., **K55** 245, **O01** 199; *Desmodium trifoliastrum* Miq., **FMP1** 606; prostrate shrub; swampy forest; Pk, Ph.

122.29.2 **Desmodium caudatum** (Thunb. *ex* Murr.) DC., **K55** 248, **O01** 184; *Desmodium laburnifolium* (Poir.) DC., **FMP1** 608; shrub; lowland forest.

122.29.3 **Desmodium gangeticum** (L.) DC., **FMP1** 610, **K55** 249, **O01** 184; slender shrub to 120 cm tall; weed of shady waste ground; widespread.

122.29.4a **Desmodium heterocarpon** (L.) DC. ssp. **heterocarpon**, **K55** 251, **O01** 210, **D44** 136; *Desmodium polycarpum* (Poir.) DC., **FMP1** 609; shrub to 1 m tall; waste ground and roadsides; widespread.

122.29.4b **Desmodium heterocarpon** (L.) DC. ssp. **ovalifolium** (Prain) H. Ohashi, **K55** 251, **O01** 210, **D45** 139; *Desmodium ovalifolium* Wall. *ex* Merr., **FMP1** 610; shrub to 1 m tall; waste ground and roadsides; widespread.

122.29.5 **Desmodium heterophyllum** (Willd.) DC., **FMP1** 606, **K55** 251, **O01** 239; trailing herb; common among short grass; widespread.

122.29.6 **Desmodium laxiflorum** DC., **K55** 252, **V39** 401, **O01** 101; prostrate shrub; waste ground; scattered.

122.29.7 **Desmodium laxum** DC., **FMP1** 608, **K55** 253, **O01** 134; wiry plant to 120 cm tall; hill and montane forest; Pk, Ph.

122.29.8 **Desmodium megaphyllum** Zoll., **FMP1** 608, **K55** 253, **O01** 111; bushy shrub to 2.5 m tall; lowland forest; once from Ulu Batang Padang, Pk.

122.29.9 **Desmodium obcordatum** (Miq.) Kurz, **T19** 127; *Hegnera obcordata* (Miq.) Schindl., **O01** 257; twining shrub; limestone, waste ground; Ps, Kd.

122.29.10 **Desmodium repandum** (Vahl) DC., **K55** 258, **O01** 160; *Desmodium scalpe* DC., **FMP1** 608; slender shrub to 1 m tall; damp lower montane forest; Cameron Highlands, Ph.

122.29.11 **Desmodium styracifolium** (Osbeck) Merr., **K55** 259, **O01** 224; *Desmodium capitatum* (Burm.*f.*) DC., **FMP1** 609; creeping shrub; open sandy places; widespread.

122.29.12 **Desmodium triflorum** (L.) DC., **FMP1** 606, **K55** 261, **O01** 245; creeping herb; common in lawns and waste places; throughout.

122.29.13 **Desmodium velutinum** (Willd.) DC., **K55** 264, **O01** 82; *Desmodium virgatum* Zoll. & Moritzi *ex* Prain, **FMP1** 611; *Desmodium lasiocarpum* (P. Beauv.) DC., **H35** 99; shrub to 120 cm tall; lowland forest and on limestone; Ps, Pk.

122.29.14 **Desmodium zonatum** Miq., **K55** 265, **O01** 107; *Desmodium ormocarpoides* (*non* DC.) Moritzi, **FMP1** 610; shrub to 60 cm tall; lowland forest; north of Peninsula.

122.30.1a **Dialium indum** L. var. **bursa** (de Wit) Rojo, **FMı12** 612; tree to 35 m; scattered in swampy lowland forest; widespread.

122.30.1b **Dialium indum** L. var. **indum**, **FMP1** 622, **TFM1** 259, **FMı12** 609; *Dialium laurinum* Baker, **FMP1** 622, **TFM1** 260; *Dialium patens* Baker, **FMP1** 622, **TFM1** 260; *Dialium marginatum* de Wit, **TFM1** 260; tree to 35 m tall; scattered in lowland forest; widespread.

122.30.2a **Dialium kunstleri** Prian var. **kunstleri**, **FMP1** 621, **TFM1** 259, **FMı12** 614; tree to 35 m tall; lowland forest; rare.

122.30.2b **Dialium kunstleri** Prain var. **trifoliatum** (de Wit) Rojo, **FMı12** 614; tree to 35 m tall; lowland forest.

122.30.3 **Dialium platysepalum** Baker, **FMP1** incl. var. *ambiguum* (Prain) Ridl., **TFM1** 261, **FMı12** 612; *Dialium kingii* Prain, **FMP1** 624, **TFM1** 259; *Dialium maingayi* Baker, **FMP1** 622, **TFM1** 260; *Dialium wallichii* Prain, **FMP1** 623, **TFM1** 261; tree to 35 m tall; scattered in the lowland forest; throughout.

122.30.4 **Dialium procerum** (Steenis) Steyaert, **TFM1** 261, **FMı12** 614; tree to 35 m tall; lowland forest; Pk, Ph, Sl, NS.

122.31.1 **Dioclea javanica** Benth., **FMP1** 571, **M28** 270; high-climbing liana; lowland forest; Pk, Sl.

122.31.2 **Dioclea reflexa** Hook.*f.*, **FMP1** 571; liana; thickets and forest margins; widespread.

122.32.1 **Dunbaria nivea** Miq., **N06** 126; *Dunbaria scortechinii* Prain, FMP1 563; climber; forest margins; Ps, Pn, Pk, Ph.

122.33.1 **Entada rheedei** Spreng., **FMI11** 180; *Entada schefferi* Ridl., **FMP1** 654; huge woody climber reaching lengths of 120 m; lowland forest to 400 m, often near the sea; widespread.

122.33.2 **Entada spiralis** Ridl., **FMP1** 655, **FMı11** 180; woody climber to 25 m long; lowland forest to 540 m; south of the Peninsula.

122.34.1 **Eriosema chinense** Vogel, **FMP1** 565, **M28** 380; herb to 50 cm tall; rare in dry grassy places; Pk, Ml.

122.35.1 **Erythrina fusca** Lour., **TFM1** 291, **K72** 340; *Erythrina atrosanguinea* Ridl., **FMP1** 578; *Erythrina ovalifolia* Roxb., **FMP1** 579; tree to 25 m tall; lowland forest; widespread, commoner in the north.

122.35.2 **Erythrina subumbrans** (Hassk.) Merr., **TFM1** 292, **K72** 355; *Erythrina lithosperma* (*non* Blume) Miq., **FMP1** 579; tree to 15 m tall; hill forest; Main Range.

122.35.3 **Erythrina variegata** L., **K72** 430; *Erythrina indica* Lam., **FMP1** 578; *Erythrina rostrata* Ridl., **FMP2** 580; *Erythrina orientalis* (L.) Murr., **TFM1** 292; tree to 15 m tall; rare in the wild on sandy beaches, widely cultivated; P. Langkawi, East Coast.

122.36.1 **Flemingia macrophylla** (Willd.) Merr., **M28** 362; *Flemingia congesta* Roxb., **FMP1** 566; shrub to 1.5 m tall; open dry places; widespread.

122.36.2 **Flemingia strobilifera** (L.) Roxb., **FMP1** 565, **M28** 360; shrub to 1.5 m tall; dry open spots, roadsides; widespread.

122.37.1 **Fordia albiflora** (Prain) Dasuki & Schot, **D06** 195; *Millettia albiflora* Prain, **FMP1** 584, **TFM1** 296; tree 6–30 m tall; lowland forest, often near rivers; Tg, Pk, Ph, Sl, Jh; endemic.

122.37.2 **Fordia bracteolata** Dasuki & Schot, **D06** 196; tree about 12 m tall; lowland forest; Pk, Sl; endemic.

122.37.3 **Fordia incredibilis** Whitmore, **TFM1** 293, **D06** 197; tree to 8 m tall; gregarious in lowland forest; only known from NW slopes of Gg Belumut, Jh; endemic.

122.37.4 **Fordia johorensis** Whitmore, **TFM1** 293, **B38** 251; tree to 6 m tall; lowland forest; Jh; endemic.

122.37.5 **Fordia lanceolata** Ridl., **FMP5** 304, **TFM1** 294, **B38** 253; tree to 10 m usually smaller; gregarious in hill forest 500–700 m; Sl, NS; endemic.

122.37.6 **Fordia ngii** Whitmore, **TFM1** 294, **D06** 199; tree 4–6 m tall; lowland and hill forest; Ph, Jh; endemic.

122.37.7 **Fordia ophirensis** Ridl., **FMP5** 304, **TFM1** 294, **B38** 254; small tree or shrub; hill forest 300–400 m; twice collected from Mt Ophir, Jh; endemic.

122.37.8 **Fordia pauciflora** Dunn, **FMP1** 586, **TFM1** 294, **B38** 254; slender treelet to 3 m tall; lowland forest; Pk.

122.37.9 **Fordia unifoliata** (Prain) Dasuki & Schot, **D06** 202; *Millettia unifoliata* Prain, **FMP1** 584, **TFM1** 298; tree to 10 m tall; hill slopes, often near the sea; Pk including P. Pangkor; endemic.

122.37.10 **Fordia sp. a**, **D06** 202; tree about 9 m high; once from Gg Panti, Jh; endemic.

122.38.1 **Geissaspis cristata** Wight & Arn., **FMP1** 600; trailing herb; open sandy places, rice-fields; Ps, Kd.

122.39.1 **Indigofera galegoides** DC., **D09** 118; *Indigofera finlaysoniana* Grah. *ex* Ridl., **FMP1** 581; shrub 1–4 m tall; roadsides and thickets; sporadic.

122.39.2 **Indigofera hirsuta** L., **FMP1** 580, **D09** 120; shrub to 1.5 m tall; sandy seashores; fairly widespread.

122.39.3 **Indigofera spicata** Forssk., **D09** 132; shrublet 40–75 cm tall; grassy places; naturalized from drier parts of Asia.

122.39.4 **Indigofera suffruticosa** Mill., **D09** 134; shrub to 2.5 m tall; waste places; naturalized from tropical America.

122.39.5 **Indigofera tinctoria** L., **FMP1** 581, **D09** 136; shrub 60–100 cm tall; waste places; escape, naturalized.

122.39.6 **Indigofera zollingeriana** Miq., **D09** 142; shrub or small tree; sandy beaches.

122.40.1 **Inocarpus fagiferus** (Parkinson) Fosberg, **TFM1** 295; small, multi-stemmed tree; brackish swamp forest; only known from Sg Sedili, Jh.

122.41.1 **Intsia bijuga** (Colebr.) Kuntze, **TFM1** 262, **FMı12** 623; *Afzelia bijuga* (Colebr.) A. Gray, **FMP1** 639; *Afzelia retusa* Kurz, **FMP1** 639; tree to 25 m tall; coasts and tidal reaches of rivers; throughout.

122.41.2 **Intsia palembanica** Miq., **TFM1** 262, **FMı12** 62; *Afzelia palembanica* (Miq.) Baker, **FMP1** 640; large-buttressed tree to 55 m tall; common in lowland forests; throughout.

122.42.1 **Koompassia excelsa** (Becc.) Taub., **FMP1** 620, **TFM1** 264, **FMı12** 632; very tall tree reaching over 70 m in some instances; lowland forest; Ph and Sl northward.

122.42.2 **Koompassia malaccensis** Maing. *ex* Benth., **FMP1** 620, **TFM1** 265, **FMı12** 634; big tree to 60 m tall; common in lowland and hill forests; throughout.

122.43.1 **Kunstleria curtisii** Prain, **FMP1** 599 incl. var. *laxiflora* Prain, **R12** 469; stout liana; lowland forest; Pn, Pk; endemic.

122.43.2 **Kunstleria forbesii** Prain, **FMP1** 600, **R12** 471; liana to 10 m long; lowland forest; Pk.

122.43.3 **Kunstleria kingii** Prain, **FMP1** 599, **R12** 476; stout liana to 30 m long; hill forest; Pk; endemic.

122.43.4 **Kunstleria ridleyi** Prain, **FMP1** 600, **R12** 480; *Kunstleria derryi* Prain, **FMP1** 600; big liana; lowland forest; Ml, Sp.

122.44.1 **Leucaena leucocephala** (Lam.) de Wit, **FMI11** 182; *Leucaena glauca* Benth., **FMP1** 655; shrub or small tree to 10 m tall; widely planted, establishing in waste ground; widespread; naturalized from tropical America.

122.45.1 **Leucostegane latistipulata** (Prain) Prain, **FMP1** 643, **TFM1** 266, **FMı12** 636; tree to 6 m tall; gregarious in understorey of hill forest; only known from Lumut, Pk.

122.46.1 **Macroptilium lathyroides** (L.) Urb.; **M28** 343; *Phaseolus semierectus* L., **FMP1** 567; shrub or climber; waste ground; Sp and probably elsewhere; naturalized from tropical America.

122.47.1a **Maniltoa polyandra** (Roxb.) Harms var. **kurzii** (Prain) Meeuwen, **K54** 44, **TFM1** 267, **FMı12** 645; *Cynometra polyandra* Roxb. var. *kurzii* Prain, **FMP1** 636; large tree; hill forest; Pn; poorly known.

122.47.1b **Maniltoa polyandra** (Roxb.) Harms var. **polyandra**, **FMı12** 645; large tree; hill forest; Pn; poorly known.

122.48.1 **Millettia decipiens** Prain, **FMP1** 585, **TFM1** 297; tree; lowland riverbanks; once from Kuala Dipong, Pk.

122.48.2 **Millettia galliflagrans** Whitmore, **TFM1** 297; tree to 4 m tall; swampy lowland forest; only known from Kluang F.R., Jh; endemic.

122.48.3 **Millettia hemsleyana** Prain, **FMP1** 585, **TFM1** 297; tree; often leaning over lowland rivers; widespread, common in Kl and Ph.

122.48.4 **Millettia pterocarpa** Dunn, **FMP1** 585, **TFM1** 298; tree; lowland forest; thrice collected from Pk; endemic.

122.48.5 **Millettia sericea** (Vent.) Benth., **FMP1** 584, **TFM1** 298; liana; common in lowland forest; widespread.

122.48.6 **Millettia sp.**, **B38** 257; *Fordia filipes* (*non* Dunn) Whitmore, **TFM1** 293.

122.48.7 **Millettia sp. a**, **TFM1** 298; tree to 4 m tall; Ml.

122.48.8 **Millettia sp. b**, **TFM1** 299; small tree; Ulu Endau, Jh.

122.49.1 **Mimosa bimucronata** (DC.) Kuntze, **FMı11** 184; *Mimosa sepiaria* Benth., **FMP1** 656; shrub or tree to 8 m tall; roadsides, waste ground; Sp; naturalized from South America.

122.49.2 **Mimosa diplotricha** C. Wright *ex* Sauvalle, **FMi11** 184; *Mimosa invisa* [*non* Mart. *ex* Colla] Mart., **M47** 328; straggling or scrambling shrub; waste ground, plantation weed; widespread; naturalized from tropical America.

122.49.3 **Mimosa pigra** L., **FMi11** 185; spreading and arching shrub to 4 m tall; waste places, roadsides; widespread; naturalized from tropical America.

122.49.4a **Mimosa pudica** L. var. **hispida** Brenan, **FMP1** 656 in part, **FMi11** 186; erect or prostrate herb or subshrub; waste places, weed of grassland, to 1000 m; throughout; naturalized from South America.

122.49.4b **Mimosa pudica** L. var. **tetranda** (Humb. & Bonpl. *ex* Willd.) DC., **FMP1** 656 in part, **FMi11** 186; erect or prostrate herb or subshrub; waste places, weed of grassland, to 1000 m; throughout; naturalized from South America.

122.49.4c **Mimosa pudica** L. var. **unijuga** (Duchass. & Walp.) Griseb., **FMP1** 656 in part, **FMi11** 186; erect or prostrate herb or subshrub; waste places, weed of grassland; throughout; naturalized from South America.

122.49.5 **Mimosa quadrivalvis** L. var. **leptocarpa** (DC.) Barneby, **B06** 50; procumbent shrub to 50 cm tall; waste places, roadsides; Kd, Pn, Pk; naturalized from South America.

122.50.1 **Mucuna acuminata** Grah. *ex* Baker, **FMP1** 577, **W18** 214; slender climber; lowland forest, often near rivers; Pn, Pk, Sl, Sp.

122.50.2 **Mucuna biplicata** Teijsm. & Binn. *ex* Kurz, **FMP1** 576, **W18** 228; large climber; lowland forest margins; P. Langkawi, Kl, Pn, Pk, Ph, Sl, Jh.

122.50.3 **Mucuna gigantea** (Willd.) DC., **FMP1** 577, **W18** 21; large sprawling climber; thickets, often near the sea; Kd, Pk, ?Ph, Ml, Jh, Sp.

122.50.4 **Mucuna pruriens** (L.) DC., **FMP1** 577, **W18** 235; long slender climber; forest margins; Ps, Pk.

122.50.5 **Mucuna stenoplax** Wilmot-Dear, **W18** 218; climber; lowland forest; only recorded from Kaki Bukit, Ps.

122.51.1 **Neptunia oleracea** Lour., **FMP1** 653, **FMi11** 189; aquatic floating herb to 2.5 m long; pools and ditches in the lowlands; widespread.

122.51.2 **Neptunia plena** (L.) Benth., **S59** 188, **FMi11** 214; herb or subshrub; waste places, plantations; Jh, Sp; naturalized from tropical America.

122.52.1 **Ormocarpum cochinchinense** (Lour.) Merr., **R32** 169; *Ormocarpum glabrum* Teijsm. & Binn., **S23** 32; shrub or small tree to 7 m tall; Sp.

122.53.1 **Ormosia bancana** (Miq.) Merr., **K54** 229, **TFM1** 300; *Ormosia parvifolia* Baker, **FMP1** 614; tree to 20 m tall; lowland forest, often near rivers or the sea; P. Lankawi, P. Pangkor, Ph, Ml, Sp.

122.53.2 **Ormosia gracilis** Prain, **FMP1** 613, **K54** 230, **TFM1** 301; tree to 15 m tall; lower montane forest; a few collections from Kd, Pk and NS; endemic.

122.53.3 **Ormosia grandistipulata** Whitmore, **TFM1** 301; *Ormosia* sp., **K54** 236; small tree to 4 m tall; Tg.

122.53.4 **Ormosia macrodisca** Baker, **FMP1** 613, **K54** 230, **TFM1** 301; tree to 30 m tall; lowland forest; once each from Sl, Ml and Sp.

122.53.5 **Ormosia penangensis** Ridl., **FMP1** 613, **K54** 233, **TFM1** 301; tree to 25 m tall; hill forest; twice from Penang Hill.

122.53.6 **Ormosia polita** Prain, **K54** 233, **TFM1** 301; *Ormosia nitida* (*non* Vogel) Prain, **FMP1** 613; tree to 15 m tall; lowland and hill forest; Kd, Pk, Sl, NS; endemic.

122.53.7 **Ormosia scandens** Prain, **FMP1** 612, **K54** 236, **TFM1** 299; woody climber; hill forest; only known from type, Larut, Pk; endemic.

122.53.8 **Ormosia sumatrana** (Miq.) Prain, **FMP1** 614, **K54** 234, **TFM1** 301; *Ormosia microsperma* Baker, **FMP1** 614; tree to 20 m tall; lowland forest; Kd, Kl, Ph, Jh, Sp.

122.53.9 **Ormosia venosa** Baker, **FMP1** 615, **K54** 236, **TFM1** 302; tree to 25 m tall; hill forest; few collections from Tg, Sl, Ml.

122.54.1 **Paraserianthes falcataria** (L.) I.C. Nielsen, **FMı11** 151; *Albizia moluccana* Miq., **FMP1** 659; *Albizia falcata auct. non* (L.) Backer, **TFM1** 277; tree to 40 m tall or greater; secondary forest and waste ground; Sp and probably elsewhere; naturalized from East Malesia.

122.55.1 **Parkia singularis** Miq., **TFM1** 281, **FMı11** 197; tree to 30 m or more tall; lowland and hill forest to 500 m; Tg, Pk, Ph, Sl, Jh.

122.55.2 **Parkia speciosa** Hassk., **FMP1** 652, **TFM1** 281, **FMı11** 198; tree to 35 m tall, sometimes bigger; lowland and hill forest to 900 m, often planted; widespread.

122.55.3 **Parkia sumatrana** Miq. ssp. **streptocarpa** (Hance) H.C. Hopkins, **FMı11** 200; *Parkia sumatrana* Miq., **TFM1** 282; tree to 35 m tall; rare in lowland and hill forest; Kd, Pk.

122.55.4 **Parkia timoriana** (DC.) Merr., **FMı11** 201; *Parkia roxburghii* G. Don, **FMP1** 652; *Parkia javanica auct. vix* (Lam.) Merr., **TFM1** 281; very big tree to 50 m tall; lowland and hill forest to 600 m, sometimes planted; widespread.

122.56.1 **Peltophorum dasyrhachis** (Miq.) Kurz, **FMP1** 647, **TFM1** 267, **FMı12** 650; tree to 20 m tall; lowland primary and secondary forest; West Coast, Ml northward.

122.56.2 **Peltophorum pterocarpum** (DC.) K. Heyne, **TFM1** 268, **FMi12** 651; *Peltophorum ferrugineum* (Decne.) Benth., **FMP1** 646; tree to 20 m tall; rocky and sandy shores, widely planted inland; all coasts.

122.57.1 **Pericopsis mooniana** Thwaites, **TFM1** 302; tree; near the sea; once each from P. Langkawi, Kd mainland and ?Ph.

122.58.1 **Phylacium bracteosum** Benn., **FMP1** 604, **B35** 490; twining vine; forest margins; once from Gg Pondok, Pk.

122.59.1 **Phyllodium pulchellum** (L.) Desv., **O01** 276; *Desmodium pulchellum* (L.) Benth., **FMP1** 607, **K55** 256; shrub to 2 m tall; open sandy places; widespread.

122.60.1a **Pongamia pinnata** (L.) Pierre var. **pinnata**, **TFM1** 303; *Pongamia glabra* Vent. var. *typica*, **FMP1** 593; small tree sometimes to 20 m tall; sandy and rocky shores; all coasts.

122.60.1b **Pongamia pinnata** (L.) Pierre var. **xerocarpa** (Hassk.) Alston, **TFM1** 303; *Pongamia glabra* Vent. var. *xerocarpa* (Hassk.) Prain, **FMP1** 593; small tree sometimes to 20 m tall; inland, often along rivers; Pk, Ph, Ml, Sp.

122.61.1 **Pseudarthria viscida** (L.) Wight & Arn., **V10** 165, **S22** 32; herb; Sp; naturalized from drier parts of Asia.

122.62.1 **Pterocarpus indicus** Willd., **FMP1** 593, **TFM1** 303; tree to 30 m tall; coastal, along tidal rivers, extensively planted; Ph, Jh (wild localities).

122.63.1 **Pterolobium densiflorum** Prain, **FMP1** 648, **FMi12** 657; prickly liana; lowland forest; Pn.

122.63.2 **Pterolobium microphyllum** Miq., **S59** 188, **FMi12** 659; liana or scrambling shrub; hill forest; Bt Lagong, Sl.

122.64.1a **Pueraria phaseoloides** (Roxb.) Benth. var. **javanica** (Benth.) Baker, **V05** 75; *Pueraria phaseoloides* (Roxb.) Benth., **FMP1** 571 in part; creeping or climbing vine; roadsides, waste places, forest margins; widespread.

122.64.1b **Pueraria phaseoloides** (Roxb.) Benth. var. **phaseoloides**, **V05** 78; *Pueraria phaseoloides* (Roxb.) Benth., **FMP1** 571 in part; creeping or climbing vine; roadsides, waste places, forest margins; widespread.

122.65.1 **Rothia indica** (L.) Druce, **R32** 184; *Rothia trifoliata* (Roth) Pers., **FMP1** 559; herb to 20 cm tall; sandy shores and fields; Pn.

122.66.1 **Saraca cauliflora** Baker, **FMP1** 641, **FMi12** 671 in synonymy; *Saraca thaipingensis* Cantley *ex* Prain, **FMP1** 640, **Z02** 416, **TFM1** 270, **FMi12** 671; *Saraca declinata auct. non* (Jack) Miq., **FMP1** 641; tree to 15 m tall; lowland and hill forest, often riverine; Ml and Ph northward.

122.66.2 **Saraca declinata** (Jack) Miq., **Z02** 419, **TFM1** 269, **FMi12** 665; *Saraca macroptera* Miq., **FMP1** 642; *Saraca palembanica* (Miq.) Baker, **FMP1** 642; *Saraca triandra auct. non* (Roxb.) Baker, **FMP1** 642; tree to 15 m tall; common in lowland and hill forest, often riverine; widespread.

122.66.3 **Saraca indica** L., **Z02** 422, **TFM1** 269, **FMi12** 668; *Saraca bijuga* Prain, **FMP1** 641; *Saraca kunstleri* Prain, **FMP1** 641; tree to 15 m tall; lowland and hill forest; Kd, Pn, Kl, Pk, Ph, Jh.

122.67.1 **Senna alata** (L.) Roxb., **I04** 460, **FMi12** 675; *Cassia alata* L., **FMP1** 619, **D18** 231; shrub to 5 m tall; common in damp waste ground; throughout; naturalized from tropical America.

122.67.2 **Senna hirsuta** (L.) Irwin & Barneby, **I04** 425, **FMi12** 679; *Cassia hirsuta* L., **FMP1** 618, **D18** 250; foetid herb, sometimes shrubby, to 2.5 m tall; waste ground; sporadic; naturalized from tropical America.

122.67.3 **Senna obtusifolia** (L.) Irwin & Barneby, **I04** 252, **FMi12** 681; *Cassia obtusifolia* L., **FMP1** 618, **D18** 254; herb, sometimes shrubby, to 2 m tall; waste ground; widespread; naturalized from tropical America.

122.67.4 **Senna occidentalis** (L.) Link, **I04** 436, **FMi12** 681; *Cassia occidentalis* L., **FMP1** 618, **D18** 256; herb, sometimes shrubby, to 3 m tall; waste ground; widespread; naturalized from tropical America.

122.67.5 **Senna siamea** (Lam.) Irwin & Barneby, **I04** 98, **FMi12** 685; *Cassia siamea* Lam., **FMP1** 617, **D18** 263, **TFM1** 247; tree to 20 m tall; waste ground around villages, much cultivated; possibly native.

122.67.6 **Sennna sulfurea** (Collad.) Irwin & Barneby, **I04** 78, **FMi12** 687; *Cassia glauca* Lam., **FMP1** 616; *Cassia surattensis* Burm.*f.*, **D18** 269; shrub or small tree to 7 m tall; waste places; to India and Burma.

122.67.7 **Senna timoriensis** (DC.) Irwin & Barneby, **I04** 98, **FMi12** 689; *Cassia timoriensis* DC., **FMP1** 617; tree to 8 m tall; lowlands, often on limestone; Kd, P. Langkawi, Kl, Pk, Sl.

122.67.8 **Senna tora** (L.) Roxb., **FMi12** 689; *Cassia tora* L., **FMP1** 618, **D18** 276; foetid herb to 120 cm tall; weed of cultivation; widespread; naturalized from tropical America.

122.68.1 **Serianthes grandiflora** Benth., **FMP1** 657, **FMi11** 160; *Serianthes dilmyi* Fosberg, **TFM1** 289; tree to 35 m tall, usually smaller; sea shores, commoner on offshore islands; Ml, Jh, Sp.

122.69.1 **Sesbania cannabina** (Retz.) Poir., **FMP1** 582, **V39** 360; herb to 2 m tall; damp open spots; Ps, Pk, Sp; naturalized - origin unclear, probably Australasia.

122.69.2 **Sesbania javanica** Miq., **V39** 362; *Sesbania paludosa* (Roxb.) Prain, **FMP1** 582; herb to 4 m tall; open marshy ground; Kd.

122.70.1 **Sindora coriacea** (Baker) Maingay *ex* Prain, **FMP1** 539, **TFM1** 271, **FMı12** 697; tree to 30 m tall; lowland forest; widespread.

122.70.2 **Sindora echinocalyx** (Benth.) Prain, **TFM1** 272, **FMı12** 698; tree to 30 m or more tall; hill forest to 700 m; widespread.

122.70.3 **Sindora siamensis** Teijsm. *ex* Miq., **FMP1** 638, **TFM1** 272, **FMı12** 703; tree to 30 m tall; hill forest; recorded once from Kl.

122.70.4 **Sindora velutina** Baker, **FMP1** 638, **TFM1** 273, **FMı12** 707; tree to 30 m tall; lowland and hill forest; widespread but scattered.

122.70.5 **Sindora wallichii** Grah. *ex* Benth., **FMP1** 637, **TFM1** 273, **FMı12** 708; *Sindora intermedia* (Baker) Prain, **FMP1** 638; tree to 30 m tall; lowland and hill forest; widespread but absent from north-west.

122.71.1 **Smithia sensitiva** Aiton, **FMP1** 601, **V39** 370, **R32** 171; diffuse spreading herb; open sandy places; Ps, Pk.

122.72.1 **Sophora tomentosa** L., **FMP1** 612; silvery shrub to 5 m tall; sea shores; common on the East Coast.

122.73.1 **Spatholobus acuminatus** Benth., **FMP1** 575, **R13** 161; stout woody climber; lowland forest margins; Pn.

122.73.2 **Spatholobus auritus** Ridd.-Num., **R13** 160; liana; forest; only known from type, Pn; endemic.

122.73.3 **Spatholobus bracteolatus** Prain *ex* King, **FMP1** 574, **R13** 167; liana; hill forest; Pn, ?Pk; endemic.

122.73.4 **Spatholobus dubius** Prain, **FMP1** 575, **R13** 169; high-climbing liana; lowland and hill forest; Pn, Pk; endemic.

122.73.5a **Spatholobus ferrugineus** (Zoll. & Moritzi) Benth. var. **ferrugineus**, **FMP1** 574, **R13** 170; high-climbing liana; lowland and hill forest to 1000 m; widespread.

122.73.5b **Spatholobus ferrugineus** (Zoll. & Moritzi) Benth. var. **sericophyllus** Ridl., **FMP1** 574, **R13** 172; high-climbing liana; lowland forest; Sp; endemic variety.

122.73.6 **Spatholobus gyrocarpus** Benth., **FMP1** 574, **R13** 172; liana to 45 m long; lowland forest; north of Malaya.

122.73.7 **Spatholobus harmandii** Gagnep., **R13** 173; *Spatholobus compar* Craib, **H33** 99; liana to 15 m high; forest margins; north of Malaya.

122.73.8 **Spatholobus macropterus** Miq., **R13** 178; liana reaching to 35 m; lowlands and hills; north of Malaya (3 records).

122.73.9 **Spatholobus maingayi** Prain *ex* King, **FMP1** 575, **R13** 180; liana climbing to 25 m; lowland forest margins; more frequent in the south.

122.73.10 **Spatholobus ridleyi** Prain *ex* King, **FMP1** 575, **R13** 194; large liana exceeding 30 m in length; lowland forest; twice collected in Sp; endemic.

122.74.1 **Stylosanthes guianensis** (Aubl.) Sw., **V39** 373, **C26** 662, **R32** 179; herb to 1.5 m tall; waste ground; Sp; naturalized from tropical America.

122.74.2 **Stylosanthes humilis** Kunth, **V39** 373, **R32** 180; *Stylosanthes sundaica* Taub., **K09** 39; prostrate or erect herb; waste ground; Sp; naturalized from tropical America.

122.75.1 **Sympetalandra hildebrandii** Steenis, **V19** 166, **FMı12** 711; *Sympetalandra borneensis auct. non* Stapf, **TFM1** 274 in part; tree to 15 m tall; hill forest; Ph, Jh; endemic.

122.75.2 **Sympetalandra unijuga** (Airy Shaw) Steenis, **FMı12** 166; *Sympetalandra borneensis auct. non* Stapf, **TFM1** 274 in part; tree to 30 m tall; hill forest; Jh.

122.76.1 **Tadehagi triquetrum** (L.) H. Ohashi, **O01** 290; *Desmodium triquetrum* (L.) DC., **FMP1** 611, **K55** 262; shrub about 1 m tall; lowland forest and other shady places; north of the Peninsula.

122.77.1 **Tephrosia candida** (Roxb.) DC., **B22** 445; shrub 1–3.5 m tall; forest margins and waste ground; sporadic; naturalized from India.

122.77.2 **Tephrosia noctiflora** Bojer *ex* Baker, **B22** 458; *Tephrosia subamoena* Prain, *nom. inval.*, **FMP1** 581; herb or shrub to 7.5 m tall; waste ground; widespread.

122.77.3 **Tephrosia purpurea** (L.) Pers., **FMP1** 582, **B22** 464; herb or small shrub; waste ground; scattered throughout; naturalized from dryer parts of Asia.

122.78.1 **Teramnus labialis** (L.*f.*) Spreng., **FMP1** 570, **M28** 296; twining vine; open rocky places; Ps, Pn.

122.79.1 **Uraria crinita** (L.) Desv. *ex* DC., **FMP1** 602; shrub to 1 m tall; open ground, waste places; widespread.

122.79.2 **Uraria lagopodioides** (L.) Desv. *ex* DC., **FMP1** 603, **V39** 415, **M47** 332; creeping shrub; open sandy places; Ph, Sl northward.

122.79.3 **Uraria picta** (Jacq.) Desv. *ex* DC., **FMP1** 603, **V39** 416; sparsely-branched shrub to 2 m tall; open sandy spots; Pn.

122.80.1 **Vigna adenantha** (G. Mey.) Maréchal *& al.*, **M11** 202, **M28** 340; *Phaseolus adenanthus* G. Mey., **FMP1** 567; twining vine; open country.

122.80.2 **Vigna hirtella** Ridl., **FMP1** 568; ?climber; once from the bank of Sg Chaning, Kl.

122.80.3 **Vigna marina** (Burm.) Merr.; **M28** 324; *Vigna retusa* Walp., **FMP1** 568; trailing or twining vine; common on sandy shores; all coasts.

122.80.4 **Vigna malayana** M.R. Hend., **H35** 99; *Vigna parviflora* (*non* Baker) Ridl., **FMP1** 569; trailing vine; open sandy places; Pk, Ph, NS; endemic.

122.80.5 **Vigna pilosa** (Willd.) Baker, **FMP1** 568, **V25** 381; *Dysolobium pilosum* (Willd.) Maréchal *& al.*; **L24** 107; hairy twining vine; once from P. Langkawi.

122.80.6a **Vigna umbellata** (Thunb.) Ohwi & H. Ohashi var. **gracilis** (Prain) Maréchal *& al.*; **M28** 337, **N06** 192; *Phaseolus calcaratus* Roxb. var. *gracilis* Prain, **FMP1** 567; twining vine; open places, forest margins, waste ground; widespread.

122.80.6b **Vigna umbellata** (Thunb.) Ohwi & H. Ohashi var. **umbellata**; **M28** 337, **N06** 192; *Phaseolus calcaratus* Roxb., **FMP1** 566 as var. *typica*; twining vine; open places, forest margins, waste ground; widespread.

122.81.1 **Zornia diphylla** (L.) Pers., **FMP1** 601; diffuse prostrate herb; open sandy places; Pn, Sp.

123. LENTIBULARIACEAE

123.1.1 **Utricularia aurea** Lour., **FMı8** 296, **T07** 623; *Utricularia flexuosa* Vahl, **FMP2** 491; aquatic herb with emergent infloresence to 25 cm long; ponds and ditches; widespread.

123.1.2 **Utricularia bifida** L., **FMP2** 492, **FMı8** 281, **T07** 307; herb to 20 cm tall; damp sandy places; widespread.

123.1.3 **Utricularia caerulea** L., **FMı8** 287, **T07** 187; *Utricularia albina* Ridl., **FMP2** 493; *Utricularia ophirensis* Ridl., **FMP2** 495; herb to 30 cm tall; damp sandy spots; widespread.

123.1.4 **Utricularia gibba** L., **T07** 572; *Utricularia exoleta* R.Br., **FMP2** 491, **FMı8** 294; aquatic herb, emergent infloresence to 20 cm tall; ponds and ditches; widespread.

123.1.5 **Utricularia involvens** Ridl., **FMP2** 493, **FMı8** 279, **T07** 314; herb with twining inflorescences to 60 cm long; damp grassy places; Gg Jerai, Kd.

123.1.6 **Utricularia limosa** R.Br., **FMi8** 292, **T07** 550; *Utricularia verticillata* Benj., **FMP2** 493; semi-aquatic herb to 35 cm tall; open wet places; P. Langkawi, Ph, Ml.

123.1.7 **Utricularia minutissima** Vahl, **FMP2** 492, **FMi8** 286, **T07** 170; *Utricularia nigricaulis* Ridl., **FMP2** 493; erect herb to 15 cm tall; damp ground in the lowlands and mountains; quite widespread.

123.1.8 **Utricularia punctata** Wall. *ex* A. DC., **FMP2** 491, **FMi8** 293; *Utricularia fluitans* Ridl., **FMP2** 491; aquatic herb with inflorescences emerging to 30 cm tall; lakes and slow flowing rivers; Ph, Jh, Sp.

123.1.9 **Utricularia scandens** Benj., **FMi8** 283, **T07** 379; *Utricularia wallichiana* (*non* Benj.) Wight, **FMP2** 493; twining herb to 35 cm long; damp grassy spots; once from Gg Ledang, Ml.

123.1.10 **Utricularia striatula** Sm., **FMP2** 495, **FMi8** 289, **T07** 479; herb to 20 cm tall; on wet rocks, mostly in the mountains; widespread.

123.1.11 **Utricularia subulata** L., **FMi8** 292, **T07** 524; herb to 50 cm tall; damp soil; Sl.

123.1.12 **Utricularia uliginosa** Vahl, **FMi8** 282, **T07** 333; *Utricularia griffithii* Wight, **FMP2** 492; semi-aquatic herb to 30 cm tall; shallow water, pool margins; Ml, Sp.

123.1.13 **Utricularia vitellina** Ridl., **FMP2** 492, **FMi8** 279, **T07** 399; tiny herb to 5 cm tall; peaty stream banks near mountain tops; Gg Kerbau and Gg Tahan, Ph; endemic.

124. LINACEAE

124.1.1 **Hugonia costata** Miq., **FMi10** 611; liana; lowland forest; once from Labis F.R., Jh.

124.2.1 **Indorouchera griffithiana** (Planch.) Hallier *f.*, **TFM1** 306, **FMi10** 617; *Roucheria griffithiana* Planch., **FMP1** 323; hooked liana to 30 m long; lowland and hill forest; widespread.

125. LOGANIACEAE

125.1.1 **Fagraea acuminatissima** Merr., **FMi6** 319, **TFM2** 271; *Fagraea obovata auct. non* Wall., **FMP2** 418; epiphytic climber or shrub; rocky coasts and inland forests of lowland and hills; widespread.

125.1.2 **Fagraea auriculata** Jack, **FMP2** 416, **FMi6** 326, **TFM2** 270; shrubby epiphyte or climber, sometimes free-standing; lowland and hill forest to 1200 m, sometimes cultivated; widespread.

125.1.3 **Fagraea blumei** G. Don, **FMi6** 320, **TFM2** 271; *Fagraea vaginata* King & Gamble, **FMP2** 418; tree, shrub, epiphyte or climber; lowland and hill forest, often near rivers; Pk, Ph, Sl, NS.

125.1.4 **Fagraea calcarea** M.R. Hend., **FMi6** 332, **TFM2** 271, **C14** 172; climbing shrub; limestone rockface; known only from type, Bt Chintamani, Ph; endemic.

125.1.5 **Fagraea carnosa** Jack, **FMP2** 416, **FMi6** 331, **TFM2** 271; *Fagraea rotundifolia* Ridl., **FMP2** 416; *Fagraea flavidula* Ridl., **FMP5** 322; epiphytic shrub or climber; lowland to montane forest; Tg, Pk, Ph, Sl.

125.1.6 **Fagraea ceilanica** Thunb., **FMi6** 315, **TFM2** 271; *Fagraea oblonga* King & Gamble, **FMP2** 417; epiphytic shrub, climber or small tree; coasts to mountain tops; Kl, Pk, Ph, Sl, Jh.

125.1.7 **Fagraea crenulata** Maingay *ex* C.B. Clarke, **FMP2** 420, **FMi6** 324, **TFM2** 271; thorny-trunked tree to 23 m tall; swampy forest near the sea, also planted; widespread, mostly along the west coast.

125.1.8 **Fagraea curtisii** King & Gamble, **FMP2** 417, **FMi6** 332, **TFM2** 271, **C14** 172; spreading tree or sometimes epiphytic; usually on limestone; P. Langkawi, Kd, Kl, Pk, Ph, Sl.

125.1.9 **Fagraea elliptica** Roxb., **FMi6** 303, **TFM2** 272; *Cyrtophyllum speciosum* Blume var. *montanum* Ridl., **FMP5** 322; tree to 28 m tall; montane forest; Kd, Ph.

125.1.10 **Fagraea fastigiata** Blume, **FMi6** 324, **TFM2** 270; liana, epiphytic shrub; hill forest; Kl, Pk.

125.1.11 **Fagraea fragrans** Roxb., **FMi6** 304 in part, **TFM2** 273 in part; *Cyrtophyllum lanceolatum* DC., **FMP2** 421; *Cyrtophyllum peregrinum* Blume, **FMP2** 421; tree to 30 m tall; open and swampy places, also planted; throughout.

125.1.12 **Fagraea gardenioides** Ridl., **FMP2** 416, **FMi6** 331, **TFM2** 270; epiphytic shrub; montane forest at 1200–1650 m; Pk, Ph, Sl.

125.1.13 **Fagraea gigantea** Ridl., **TFM2** 273; *Cyrtophyllum giganteum* (Ridl.) Ridl., **FMP2** 421; *Fagraea fragrans auct. non* Roxb., **FMi6** 304 in part; tree sometimes to 55 m tall; lowland forest to 600 m; Pk, Ph, Sl, NS, Ml, Sp.

125.1.14 **Fagraea racemosa** Jack *ex* Wall., **FMP2** 418, **FMi6** 311, **TFM2** 270; *Fagraea maingayi* C.B. Clarke, **FMP2** 419; *Fagraea pauciflora* Ridl., **FMP2** 419; *Fagraea ligustrina* Blume, **FMP2** 420; shrub, tree or straggling climber; common in secondary forests; widespread.

125.1.15 **Fagraea ridleyi** King & Gamble, **FMP2** 417, **FMi6** 320, **TFM2** 271; scandent shrub or small tree; on cliffs and along rivers; scattered.

125.1.16 **Fagraea tubulosa** Blume, **FMP2** 415, **FMi6** 320, **TFM2** 270; scrambling shrub; hill forest; Pk.

125.1.17 **Fagraea wallichiana** Benth., **W30** 267; *Fagraea fragrans auct. non* Roxb., **FMi6** 304 in part; tree; hill ridge forest; Kd, Pn, Kl, Tg, Jh; endemic.

125.2.1 **Mitrasacme indica** Wight, **FMi6** 384; *Mitrasacme alsinoides auct. non* R.Br., **FMP2** 413; herb to 15 cm tall; paddy field weed; Kl.

125.1.2a **Mitrasacme pygmaea** R.Br. var. **malaccensis** (Wight) Hara, **FMi6** 383; *Mitrasacme polymorpha auct. non* R.Br., **FMP2** 413; erect herb to 35 cm tall; open grassy places; scattered.

125.1.2b **Mitrasacme pygmaea** R.Br. var. **pygmaea**, **FMi6** 383; *Mitrasacme nudicaulis auct. non* Blume, **FMP2** 413; erect herb to 20 cm tall; open grassy places; once from Bt Sialang, Ml.

125.3.1 **Mitreola paniculata** Wall. *ex* G. Don, **FMi6** 375 in synonymy; *Mitreola oldenlandioides* G. Don, *nom. illeg.*, **FMP2** 413; *Cynoctonum mitreola* (L.) Britt., **FMi6** 375, **TFM2** 268, **C14** 171; erect herb to 50 cm tall; on limestone; P. Langkawi.

125.4.1 **Norrisia maior** Soler., **FMi6** 341, **TFM2** 274; *Norrisia malacennsis* Gardner var. *major* Ridl., **FMP2** 414; tree to 24 m tall; lowland forest, often near rivers; Sl southward.

125.4.2 **Norrisia malaccensis** Gardner, **FMP2** 414, **FMi6** 341, **TFM2** 275; tree to 42 m tall; lowland forest; Pk southward.

125.5.1 **Strychnos axillaris** Colebr., **FMi6** 358; *Strychnos pubescens* C.B. Clarke, **FMP2** 424; *Strychnos quintuplinervis* A.W. Hill, **FMP2** 424; *Strychnos malaccensis* Benth., **FMP2** 425; *Strychnos penicillata* A.W. Hill, **FMP2** 425; *Strychnos scortechinii* A.W. Hill, **FMP2** 425; liana; lowland forest; widespread.

125.5.2 **Strychnos colubrina** L., **FMi6** 355; *Strychnos septemnervis* C.B. Clarke, **FMP2** 423 incl. var. *imberbis* A.W. Hill; big liana; lowland forest; Pn, Pk, Ml.

125.5.3 **Strychnos curtisii** King & Gamble, **FMP2** 424, **FMi6** 353; large liana; hill forest; Pn, Pk; endemic.

125.5.4 **Strychnos flavescens** King & Gamble, **FMP2** 423, **FMi6** 357; liana; swampy lowland forest; Pn, Pk, Ml.

125.5.5 **Strychnos ignatii** Berg., **FMi6** 347; *Strychnos ovalifolia* Wall. *ex* G. Don, **FMP2** 425; large liana; lowland and hill forest; widespread.

125.5.6 **Strychnos quadrangularis** A.W. Hill, **FMP2** 426, **FMi6** 356; liana; lowland forest; Pk, Sl; endemic.

125.5.7 **Strychnos maingayi** C.B. Clarke, **FMP2** 423, **FMi6** 350; liana; lowland forest; Pk, Sp.

125.5.8 **Strychnos ridleyi** King & Gamble, **FMP2** 424, **FMi6** 360; climbing shrub; lowland forest; Sp; endemic.

125.5.9 **Strychnos rufa** C.B. Clarke, **FMP2** 426, **FMi6** 361; liana, flowers unknown; montane forest; Pk, Sl; endemic.

125.5.10 **Strychnos villosa** A.W. Hill, **FMi6** 351; *Strychnos hirsutiflora* A.W. Hill, **FMP2** 423; large liana; lowland forest; Pk, Jh.

Strychnos ovata A.W. Hill [**FMi6** 351] may be represented by one doubtfully identified specimen from Pn.

126. LOPHOPYXIDACEAE

126.1.1 **Lophopyxis maingayi** Hook.*f*., **FMP1** 435, **FMi7** 91; large liana; lowland forest and forest margins; Pn to Ml.

127. LORANTHACEAE

127.1.1 **Amyema beccarii** (Tiegh.) Danser, **D03** 326, **B12** 313; mistletoe; lowlands; Ph, Jh.

127.2.1 **Amylotheca duthieana** (King) Danser, **D03** 244, **B12** 112; *Loranthus duthieanus* King, **FMP3** 156; *Elytranthe rubra* Ridl., **FMP3** 159; shrubby mistletoe; lowland and hill forest to 700 m; Pk, Sp.

127.3.1 **Barathranthus axanthus** (Korth.) Miq., **D03** 393; *Loranthus lobbii* Hook.*f*., **FMP3** 153; shrubby mistletoe; lowlands to mountains; Kd, Pn, Pk, Ph, Sl, NS, Jh, Sp.

127.3.2 **Barathranthus productus** (King) Tiegh., **D03** 396; *Loranthus productus* King, **FMP3** 152; stout, bushy mistletoe; montane forest; Pk, Ph.

127.4.1 **Dendrophthoe falcata** (L.*f*.) Ettingsh., **D03** 403; *Loranthus longiflorus* Desr., **FMP3** 155; large shrubby mistletoe; Ml.

127.4.2 **Dendrophthoe grandifrons** (King) Danser, **D03** 410; *Loranthus grandifrons* King, **FMP3** 155; big shrubby mistletoe; lowlands; Pk, Ph, Sl, NS, Ml.

127.4.3 **Dendrophthoe lanosa** (Korth.) Danser, **D03** 412; *Loranthus casuarinae* Ridl., **FMP3** 154; slender hanging mistletoe; lowlands; Ph.

127.4.4 **Dendrophthoe pentandra** (L.) Miq., **D03** 417; *Loranthus pentandrus* L., **FMP3** 155; *Loranthus crassus* Hook.*f.*, **FMP3** 155; large shrubby mistletoe; lowlands to mountains, common; Kd, Kl, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

127.5.1 **Elytranthe albida** (Blume) Blume, **FMP3** 158, **D03** 305; large shrubby mistletoe, high on tall trees; lowland and hill forest; Pn, Pk, Ph, Ml, Jh, Sp.

127.5.2 **Elytranthe arnottiana** (Korth.) Miq., **D03** 307; *Elytranthe maingayi* (Hook.*f.*) Tiegh., **FMP3** 158; small shrubby mistletoe; low on small trees; Ml, Sp.

127.6.1 **Helixanthera apodanthes** Danser, **D03** 371; *Loranthus pulcher* var. *sessiliflora* Ridl., **FMP3** 151; shrubby mistletoe; lowlands and mountains; Pk, Ph; endemic.

127.6.2 **Helixanthera coccinea** (Jack) Danser, **D03** 374; *Loranthus coccineus* Jack, **FMP3** 152; bushy mistletoe; lowland and hill forest; Pg, Pk, Ph, Sl, Ml, Jh, Sp.

127.6.3 **Helixanthera crassipetala** (King) Danser, **D03** 376; *Loranthus crassipetalus* King, **FMP3** 152; stout shrubby mistletoe; hill forest; Pk, Sl; endemic.

127.6.4 **Helixanthera cylindrica** (Jack) Danser, **D03** 377; *Loranthus heteranthus* DC., **FMP3** 151; big stout mistletoe; lowland and hill forest; 1000 m; Kd, Tg, Pk, Ph, Sl.

127.6.5 **Helixanthera parasitica** Lour., **D03** 381; *Loranthus pentapetalus* Roxb., **FMP3** 152; bushy mistletoe; lowlands; Ps, Kd, Tg, Pn, Pk, Ph, Sl, NS, Ml, Sp.

127.6.6 **Helixanthera pulchra** (DC.) Danser, **D03** 384; *Loranthus pulcher* DC., **FMP3** 151 incl. var. *parishii* (Hook.*f.*) Gamble; shrubby mistletoe to 2 m tall; hill forest; Kd, Pn, Pk, Ph, Sl, NS.

127.6.7 **Helixanthera valida** (Ridl.) Danser, **D03** 390; *Loranthus validus* Ridl., **FMP5** 330; Gerik, Pk; endemic.

127.7.1 **Kingella scortechinii** (King) Tiegh., **D03** 426; *Loranthus scortechinii* King, **FMP3** 156; big shrubby mistletoe; Pk, NS; endemic.

127.8.1 **Lepeostegeres beccarii** (King) Gamble, **FMP3** 162, **D03** 262, **B13** 119; creeping mistletoe to 10 m long; lowland and hill forest; Pk, Sl.

127.9.1 **Lepidaria kingii** (King) Danser, **D03** 312; *Lepeostegeres kingii* (King) Gamble, **FMP3** 162; bushy mistletoe; lowlands; Kd, Pk, Ph, Sl, Ml, Jh; endemic.

127.10.1 **Loxanthera speciosa** Blume, **FMP3** 157, **D03** 254, **B13** 115; shrubby mistletoe; lowland to montane forest at 1600 m; Pk, Sl, NS, Ml, Jh.

127.11.1 **Macrosolen avenis** (Blume) Danser, **D03** 275; *Elytranthe avenis* (Blume) G. Don, **FMP3** 160; shrubby mistletoe; montane forest above 900 m.

127.11.2 **Macrosolen cochinchinensis** (Lour.) Tiegh., **D03** 279; *Elytranthe barnesii* Gamble, **FMP3** 161; *Elytranthe globosa* G. Don, **FMP3** 161 incl. var. *puberula* Ridl.; shrubby mistletoe; common; Ps, Kd, Kl, Tg, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

127.11.3 **Macrosolen dianthus** (King) Danser, **D03** 287; *Elytranthe diantha* (King) Gamble, **FMP3** 161; *Elytranthe wrayi* Gamble, **FMP3** 161; shrubby mistletoe to 1 m tall; Pk; endemic.

127.11.4 **Macrosolen formosus** (Blume) Miq., **D03** 287; *Elytranthe formosa* (Blume) G. Don, **FMP3** 158; *Elytranthe kunstleri* (King) Gamble, **FMP3** 159; big shrubby mistletoe; high on tall trees; lowland and hill forest to 1500 m; Kl, Pk, Ph, Sl, NS.

127.11.5 **Macrosolen melintangensis** (Korth.) Miq., **B14** 26; *Elytranthe lowii* (King) Gamble, **FMP3** 160; *Macrosolen lowii* (King) Tiegh., **D03** 292; slender shrubby mistletoe; hill forest; Pk, Ph.

127.11.6 **Macrosolen papillosus** (Gamble) Danser, **D03** 293; *Elytranthe papillosa* Gamble; **FMP** 160; slender shrubby mistletoe; Jh, Sp.

127.11.7 **Macrosolen platyphyllus** (King) Danser, **D03** 294; *Elytranthe platyphylla* (King) Gamble, **FMP3** 159; shrubby mistletoe; lowland forest; Pk, Ph, Sl, NS, Jh; endemic.

127.11.8 **Macrosolen retusus** (Jack) Miq., **D03** 296; *Elytranthe retusa* (Jack) G. Don, **FMP3** 160; stout shrubby mistletoe to 60 cm tall; often on low trees near the sea; Tg, Pk, Ph, Ml, Jh, Sp.

127.11.9 **Macrosolen robinsonii** (Gamble) Danser, **D03** 297; *Elytranthe robinsonii* Gamble, **FMP3** 161; straggly mistletoe; montane forest at 900–1500 m; G. Tahan, Ph.

127.11.10 **Macrosolen tubiflorus** (Ridl.) Danser, **D03** 303; *Elytranthe tubaeflora* Ridl., **FMP3** 159; shrubby mistletoe; montane forest at about 1650 m; G. Inas, Pk; endemic.

127.12.1 **Scurrula ferruginea** (Jack) Danser, **D03** 432, **B11** 73; *Loranthus ferrugineus* Jack, **FMP3** 153; slender bushy mistletoe; common in lowland forest to 1000 m; Tg, Pn, Pk, Ph, Sl, NS, Ml, Sp.

127.12.2 **Scurrula parasitica** L., **B11** 80; *Loranthus malaccensis* Hook.*f*., **FMP3** 154; *Loranthus obtectus* DC., **FMP3** 153; *Scurrula fusca* (Blume) G.Don, **D03** 434; slender shrubby mistletoe to about 1 m tall; lowlands and hills; Kd, Kl, Pn, Pk, Ph, Sl, Ml, Jh.

127.13.1 **Taxillus chinensis** (DC.) Danser, **B11** 82; *Loranthus estipitatus* Stapf, **FMP3** 154; *Taxillus estipitatus* (Stapf) Danser, **D03** 445; slender mistletoe; mostly in the hills; Pk, Sl.

128. LYTHRACEAE

128.1.1 **Ammania baccifera** L., **FMP1** 820, **TFM2** 276, **M47** 338; herb to 30 cm tall; damp open places; Kd, Pk, Jh, Sp; origin uncertain.

128.2.1 **Cuphea carthagenensis** (Jacq.) J.F. Macbr., **TFM2** 276; herb; waste places; scattered; naturalized from South America.

128.3.1 **Duabanga grandiflora** (Roxb. *ex* DC.) Walp., **FMI4** 289, **TFM1** 444; *Duabanga sonneratioides* Buch.-Ham., **FMP1** 824; tree to 35 m tall; lowland and hills, often near rivers; NS northward.

128.4.1 **Lagerstroemia anisoptera** Koehne, **TFM2** 278; tree to 10 m tall; lowlands; P. Langkawi, Kd, Pn.

128.4.2 **Lagerstroemia floribunda** Jack, **FMP1** 823, **TFM2** 279; tree to 18 m tall; open country, often near rivers; Ps, P. Langkawi, Kd, Pn.

128.4.3 **Lagerstroemia langkawiensis** Furtado & Montein, **TFM2** 278, **C14** 174; small tree 4–6 m tall; on limestone; P. Langkawi; endemic.

128.4.4 **Lagerstroemia ovalifolia** Teijsm. & Binn., **FMP1** 823, **TFM2** 280; tree to 30 m tall; lowland forest; P. Lankawi (once), Pk, Ph, Sl, NS, Ml, Jh.

128.4.5 **Lagerstroemia siamica** Gagnep., **TFM2** 278; small tree to 12 m tall; once from Kd.

128.4.6 **Lagerstroemia speciosa** (L.) Pers., **TFM2** 280; *Lagerstroemia flos-reginae* Retz., **FMP1** 823; *Lagerstroemia macrocarpa auct. non* Kurz, **FMP1** 824; tree to 15 m tall; open country, often near rivers; NS northward, but a commonly cultivated ornamental elsewhere.

128.5.1 **Pemphis acidula** J.R. Forst. & G. Forst., **FMP1** 821, **TFM2** 276; shrub to 8 m tall; rocky and sandy shores; scattered, commonest in the south.

128.6.1 **Rotala indica** (Willd.) Koehne, **TFM2** 276, **C22** 108, **M47** 344; *Ammania peploides* Spreng., *nom. illeg.*, **FMP1** 820; erect or trailing herb to 40 cm tall; open damp places, rice fields; Ps, P. Langkawi, Kd, Tg, Pk, Ml.

128.6.2 **Rotala rosea** (Poir.) C.D.K. Cook, **C19** 86, **M44** 350; *Rotala pentandra* (Roxb.) Blatt. & Hallb., **TFM2** 276; semi-aquatic herb to 30 cm tall; margins of ponds and rivers; once from Ml.

128.6.3 **Rotala wallichii** (Hook.*f.*) Koehne, **C22** 29; semi-aquatic creeping herb; rivers and streams; P. Langkawi, Jh.

128.7.1 **Sonneratia alba** J.J.Sm., **FMi4** 285, **TFM1** 445; *Sonneratia griffithii auct. non* Kurz, **FMP1** 825; tree to 30 m tall; mangroves; all coasts.

128.7.2 **Sonneratia caseolaris** (L.) Engl., **FMi4** 283, **TFM1** 445; *Sonneratia acida* L.*f*., **FMP1** 825; tree to 15 m tall; mangroves, tidal river banks; commonest on the west coast.

128.7.3 **Sonneratia griffithii** Kurz, **FMi4** 286, **TFM1** 445; tree to 20 m tall; mangroves; very rare, a few locations.

128.7.4 **Sonneratia ovata** Back., **FMi4** 285, **TFM1** 445; *Sonneratia alba auct. non* J.J.Sm., **FMP1** 825; tree to 8 m tall; mangroves, tidal creeks; uncommon, scattered widely.

129. MAGNOLIACEAE

129.1.1 **Magnolia bintuluensis** (A. Agostini) Noot., **FMi10** 577; *Aromadendron nutans* Dandy, **TFM2** 284; tree to 25 m tall; peat swamp forest; once from Pontian, Jh.

129.1.2a **Magnolia candollii** (Blume) H. Keng var. **candollii**, **FMi10** 582; *Manglietia sebassa* King, **FMP1** 14; *Talauma kunstleri* King, **FMP1** 16; *Talauma longifolia* (Blume) Ridl., **FMP1** 16; *Talauma mutabilis* Blume, **FMP1** 16; *Talauma candollii* Blume, **TFM2** 293; *Talauma gracilior* Dandy, **TFM2** 294; *Talauma peninsularis* Dandy, **TFM2** 294; *Talauma rubra* Miq., **TFM2** 294; *Talauma sebassa* Miq. *ex* Dandy, **TFM2** 294; tree to 10 m tall; lowland and hill forest; widespread.

129.1.2b **Magnolia candollii** (Blume) H. Keng var. **obovata** (Korth.) Noot., **FMi10** 585; *Talauma oblanceolata* Ridl.; **FMP5** 286, **TFM2** 294; *Talauma betongensis* Craib, **TFM2** 291; tree to 20 m tall; lowland and hill forest; Kd, Kl, Tg, Pk, Jh.

129.1.2c **Magnolia candollii** (Blume) H. Keng var. **singapurensis** (Ridl.) Noot., **FMi10** 586; *Talauma singapurensis* Ridl., **FMP1** 16, **TFM2** 293; tree to 10 m tall; wet lowland forest; Jh, Sp.

129.1.3 **Magnolia elegans** (Blume) H. Keng, **FMi10** 577; *Aromadendron elegans* Blume, **FMP1** 17, **TFM2** 283; tree to 50 m tall; lowland and hill forest; Pn, Pk, Sl, Sp.

129.1.4 **Magnolia macklottii** (Korth.) Dandy var. **beccariana** (A. Agostini) Noot., **FMi10** 571; tree to 23 m tall; montane forest; once from Maxwell's Hill, Pk.

129.1.5 **Magnolia maingayi** King, **FMP1** 13, **TFM2** 285, **FMi10** 573; tree to 18 m tall; lowland and hill forest to 1500 m; Pk, Ph, Sl, Jh, Sp.

129.1.6 **Magnolia pahangensis** Noot., **FMi10** 579; tree; hill forest; only known from type; Bt Jeriau, Ph; endemic.

129.1.7 **Magnolia villosa** (Miq.) H. Keng, **FMi10** 588; *Talauma lanigera* Hook.*f.* & Thomson, **FMP1** 15; *Talauma villosa* Miq., **TFM2** 293; tree to 18 m tall; lowland to lower montane forest; Pn, Pk, Sl, Ml, Sp.

129.2.1 **Manglietia dolichogyna** Dandy *ex* Noot., **FMi10** 591; *Manglietia glauca auct. non* Blume, **FMP1** 14 in part; tree to 21 m tall; montane forest; Pk, Ph.

129.3.1 **Michelia champaca** L. var. **pubinervia** (Blume) Miq., **TFM2** 287, **FMi10** 603; tree to 50 m tall; lowland to lower montane forest; [var. *champaca* widely planted]; P. Langkawi, Kl, Ph.

129.3.2 **Michelia koordersiana** Noot., **FMi10** 601; tree to 32 m tall; lowland and hill forest; Sl.

129.3.3 **Michelia montana** Blume, **FMP1** 15, **TFM2** 288, **FMi10** 603; tree to 40 m tall; lowland to mountains; Pk, Ph.

129.3.4 **Michelia scortechinii** (King) Dandy, **TFM2** 288, **FMi10** 601; *Manglietia scortechinii* King, **FMP1** 14; tree to 37 m tall; hill and montane forest; Pk, Ph.

129.4.1 **Pachylarnax praecalva** Dandy, **TFM2** 289, **FMi10** 593; *Manglietia glauca auct. non* Blume, **FMP1** 14 in part; tree to 48 m tall; lowland and hill forest; Kd, Pn, Sl.

130. MALPIGHIACEAE

130.1.1 **Aspidopterys concava** (Wall.) A. Juss., **FMP1** 329, **FMi5** 129; liana to 20 m long; lowland forest; Pn, Sl, Ml, Jh.

130.1.2 **Aspidopterys tomentosa** (Blume) A. Juss. var. **obcordata** (Hemsl.) Nied., **FMi5** 130; liana; once from Kd.

130.2.1 **Brachylophon curtisii** Oliv., **FMP1** 329 incl. var. **hullettii** (King) Ridl., **FMi5** 138; shrub to 2 m tall; lowlands; west coast Pn to Jh.

130.3.1 **Hiptage benghalensis** (L.) Kurz, **FMi5** 132; *Hiptage madablota* Gaertn., **FMP1** 328; large liana to 30 m long; mostly garden escape; wild in open country in Ps.

130.3.2 **Hiptage burkilliana** Arènes, **FMi5** 131; liana; lowlands; twice from Ph; endemic.

130.3.3 **Hiptage sericea** Hook.*f.*, **FMP1** 328, **FMi5** 131; slender liana; lowland forest margins, riverbanks; Pn, Ph, Ml, Jh, Sp.

130.4.1 **Tristellateia australasiae** A. Rich., **FMP1** 327, **FMi5** 136; slender liana to 10 m long; back mangroves, also widely cultivated; widespread.

131. MALVACEAE

131.1.1 **Abelmoschus moschatus** Medik., **TFM1** 310; *Hibiscus abelmoschus* L., **FMP1** 258; erect herb to 2 m tall; weed of cultivation; Pk, Sl, Ml.

131.2.1 **Abutilon indicum** (L.) Sweet, **FMP1** 256, **V02** 170, **TFM1** 310; small shrub; waste ground; common throughout.

131.3.1 **Hibiscus floccosus** Mast., **FMP1** 259, **TFM1** 312; tree to 20 m tall; lowland forests, often along rivers; Ml northward; endemic.

131.3.2 **Hibiscus macrophyllus** Roxb. *ex* Hornem., **FMP1** 258, **TFM1** 312; tree to 20 m tall; lowland forest; Ml northward.

131.3.3 **Hibiscus surattensis** L., **FMP1** 258; scrambling spiny shrub; waste ground, open places; widespread.

131.3.4 **Hibiscus tiliaceus** L., **FMP1** 259, **TFM1** 312; tree to 12 m tall; sea shores, rocky coasts and river banks; throughout.

131.4.1 **Pavonia rigida** (Wall. *ex* Mast.) Hochr., **V02** 136, **TFM1** 310; *Urena rigida* Wall. *ex* Mast., **FMP1** 257; shrub to 1 m tall; open dry sites; Ml.

131.5.1 **Sida acuta** Burm.*f.*, **V02** 186, **TFM1** 310; *Sida carpinifolia auct. non* L.*f.*, **FMP1** 255; shrub to 1 m tall; waste places; common throughout.

131.5.2 **Sida cordifolia** L., **FMP1** 254, **V02** 199, **TFM1** 310; herb to 1 m tall; sandy open places; north of Peninsula.

131.5.3 **Sida javensis** Cav., **V02** 184, **TFM1** 310; *Sida veronicifolia* (*non* Lam.) Moritzi, **FMP1** 254; trailing herb; dry open spots; north of Peninsula.

131.5.4 **Sida mysorensis** Wight & Arn., **FMP1** 254, **V02** 180, **TFM1** 310; herb to 1 m tall; roadsides; Pk, Ph.

131.5.5a **Sida rhombifolia** L. ssp. **retusa** (L.) Borss.Waalk., **V02** 198; *Sida rhombifolia* L. var. *retusa* (L.) Mast., **FMP1** 254; erect shrub to 1 m tall; sea shores and waste places; widespread.

131.5.5b **Sida rhombifolia** L. ssp. **rhombifolia**, **V02** 195; *Sida rhombifolia* L. var. *rhomboidea* (DC.) Mast., **FMP1** 254; erect shrub to 1 m tall; sea shores and waste places; widespread.

131.6.1 **Thespesia populnea** (L.) Sol. *ex* Corrêa, **FMP1** 260, **TFM1** 313; tree to 15 m tall; sany and rocky shores; all coasts.

131.7.1a **Urena lobata** L. ssp. **lobata** var. **lobata**, **V02** 140; *Urena lobata* L. var. *lobata*, **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the hills; throughout.

131.7.1b **Urena lobata** L. ssp. **lobata** var. **viminea** (Cav.) Gürke, **V02** 141; *Urena lobata* L. var. *lobata*, **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the hills; throughout.

131.7.1c **Urena lobata** L. ssp. **sinuata** (L.) Borss.Waalk. var. **glauca** (Blume) Borss.Waalk., **V02** 144; *Urena lobata* L. var. *sinuata* (L.) Hochr., **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the lowlands; throughout.

131.7.1d **Urena lobata** L. ssp. **sinuata** (L.) Borss.Waalk. var. **sinuata**, **V02** 142; *Urena lobata* L. var. *sinuata* (L.) Hochr., **FMP1** 256 in part; shrub to 1.5 m tall; open places, roadsides, commoner in the lowlands; throughout.

131.8.1 **Wissadula periplocifolia** (L.) C. Presl *ex* Thwaites, **V02** 156, **TFM1** 310; *Wissadula zeylanica* Medik., *nom. illeg.*, **FMP1** 255; shrub to 1 m tall; dry open places; Ps, Kd, Ph.

132. MELASTOMATACEAE

132.1.1 **Anerincleistus cornutus** J.F. Maxwell, **M26** 61; shrub to 3 m tall; hill forest; only known fron Gg Lawit, Tg; endemic.

132.1.2 **Anerincleistus curtisii** Stapf, **M26** 43; *Phaulanthus curtisii* (Stapf) Ridl., **FMP1** 777; shrub to 2.5 m tall; hill and montane forest; Kd, Pn, Pk, Sl; endemic.

132.1.3 **Anerincleistus fruticosus** Ridl., **M26** 61; *Perilimnastes fruticosa* (Ridl.) Ridl., **FMP1** 773; shrub to 1 m tall; exposed rocky areas on mountains; Kl, Ph; endemic.

132.1.4 **Anerincleistus grandiflorus** Ridl., **M26** 62; *Oritrephes grandiflora* (Ridl.) Ridl., **FMP1** 771; shrub to 4 m tall; montane forest; Tg, Ph, Sl; endemic.

132.1.5 **Anerincleistus griffithii** (Hook.*f. ex* Triana) Ridl., **M26** 48; *Phaulanthus rudis* Ridl., **FMP1** 777; shrub to 2.5 m tall; lowland and hill forest; Kd, Ph, Sl, NS.

132.1.6 **Anerincleistus helferi** Hook.*f. ex* Triana, **M26** 49; *Phaulanthus helferi* (Hook.*f. ex* Triana) Ridl., **FMP1** 777; shrub to 1 m tall; lowland forest; Ph.

132.1.7 **Anerincleistus macranthus** King, **FMP1** 776, **M26** 51; shrub to 3 m tall; montane forest; Pk, Ph; endemic.

132.1.8a **Anerincleistus pauciflorus** Ridl. var. **brevipedunculus** M.P. Nayar, **M26** 53; shrub to 3 m tall; hill and montane forest, 600–1100 m; Sl; endemic.

132.1.8b **Anerincleistus pauciflorus** Ridl. var. **pauciflorus**, **FMP1** 776, **M26** 52; shrub to 6 m tall; hill and montane forest; Tg, Sl, NS; endemic.

132.1.9 **Anerincleistus pulcher** (Ridl.) Ridl., **M26** 63; *Oritrephes pulchra* Ridl., **FMP1** 771; *Oritrephes barnesii* (Ridl.) Ridl., **FMP1** 772; *Oritrephes robinsonii* (Ridl.) Ridl., **FMP1** 773; shrub to 3 m tall; montane forest to 2100 m; Kl, Tg, Ph; endemic.

132.1.10 **Anerincleistus stipularis** (Ridl.) J.F. Maxwell, **M26** 60; *Phaulanthus stipularis* Ridl., **FMP1** 777; shrub; only known from type, Bundi, Tg; endemic.

132.2.1 **Astronia macrophylla** Blume, **TFM4** 182, **M27** 97; tree to 25 m tall; lowland forest; once from Labis F.R., Jh.

132.2.2 **Astronia smilacifolia** Triana *ex* C.B. Clarke, **FMP1** 807, **TFM4** 183, **M27** 113; tree to 15 m tall; hill and montane forest at 200–1350 m; Pn, Tg, Pk, Ph, Sl, Ml.

132.3.1a **Blastus borneensis** Cogn. var. **borneensis**, **H15** 58; *Blastus cogniauxii* Stapf, **FMP1** 773; shrub to 3 m tall; hill forest; widespread.

132.3.1b **Blastus borneensis** Cogn. var. **pulverulentus** (Ridl.) C. Hansen, **H15** 61; *Blastus pulverulentus* Ridl., **FMP1** 774; shrub; Ulu Langat, Sl.

132.4.1 **Clidemia hirta** (L.) D. Don, **FMP1** 807; weedy shrub to 2 m tall; forest margins, shady places; widespread; naturalized from tropical America.

132.5.1 **Creochiton anomala** (King & Stapf *ex* King) Veldkamp, **M24** 162; *Anplectrum anomalum* King & Stapf *ex* King, **FMP1** 800; liana; lowland forest; Pk, Jh.

132.6.1 **Diplectria anomala** (King) Veldkamp, **V34** 426; *Dissochaeta anomala* King, **FMP1** 798; liana; lowland forest; Kl, Pk, Sl; endemic.

132.6.2 **Diplectria conica** Bakh.*f.*, **V34** 414, **M24** 156; liana; hill forest; Ulu Gombak, Sl.

132.6.3 **Diplectria divaricata** (Willd.) Kuntze, **V34** 417, **M24** 157; *Anplectrum glaucum* (Jack) Triana, **FMP1** 799; *Anplectrum divaricatum* (Willd.) Triana, **FMP1** 800; woody root climber; common, mostly lowland forest; Pn, Tg, Pk, Ph, Sl, NS, Ml, Sp.

132.6.4 **Diplectria stipularis** (Blume) Kuntze, **V34** 424, **M24** 157; *Anplectrum lepidosetosum* King, **FMP1** 799; liana to 15 m long; lowland and hill forest; Pn, Kl, Tg, Pk, Ml, Jh, Sp.

132.6.5 **Diplectria viminalis** (Jack) Kuntze, **V34** 427, **M24** 157; *Anplectrum pallens* (Blume) Triana, **FMP1** 800 incl. var. *petiolare* Ridl.; liana; lowland and hill forest; Pn, Kl, Pk, Sl, Ml, Jh, Sp.

132.7.1a **Dissochaeta annulata** Hook.*f. ex* Triana var. **annulata**, **FMP1** 796, **M24** 157; liana; lowland and hill forest; scattered throughout.

132.7.1b **Dissochaeta annulata** Hook.*f. ex* Triana var. **griffithii** (M.P. Nayar) J.F. Maxwell, **M22** 313, **M24** 157; liana; forest; Ph, Sl, Ml, Jh; endemic variety.

132.7.2 **Dissochaeta biligulata** Korth., **M24** 158; liana; Kd, Pn, Pk, Sl, Jh.

132.7.3 **Dissochaeta bracteata** (Jack) Blume, **FMP1** 797, **M24** 158; liana; lowland and hill forest; Pn, Pk, Sl, Ml.

132.7.4 **Dissochaeta celebica** Blume, **FMP1** 798, **M24** 158; liana; forest margins, lowlands and hills; common throughout.

132.7.5 **Dissochaeta fallax** (Jack) Blume, **M24** 158; liana; montane forest; Gg Ulu Kali, Sl and Gg Telapak, NS.

132.7.6 **Dissochaeta gracilis** (Jack) Blume, **FMP1** 797, **M24** 158; liana; forest margins; common throughout.

132.7.7a **Dissochaeta intermedia** Blume var. **intermedia**, **FMP1** 798, **M24** 158; liana; lowland and hill forest; Ph, Jh, Sp.

132.7.7b **Dissochaeta intermedia** Blume var. **sagittata** (Blume) J.F. Maxwell, **M22** 315, **M24** 159; liana; forest; Ml.

132.7.8 **Dissochaeta monticola** Blume, **M24** 159; liana; hill and montane forest; Fraser's Hill, Ph; Ulu Gombak, Sl.

132.7.9 **Dissochaeta pallida** (Jack) Blume, **FMP1** 797, **M24** 159; liana; lowland to montane forest; widespread and common.

132.7.10 **Dissochaeta punctulata** Hook.*f. ex* Triana, **FMP1** 796, **M24** 159; liana; forest margins; Tg, NS, Ml, Jh, Sp.

132.7.11a **Dissochaeta rostrata** Korth. var. **hirsuta** (Hook.*f. ex* Triana) J.F. Maxwell, **M22** 319, **M24** 159; *Dissochaeta hirsuta* Hook.*f. ex* Triana, **FMP1** 797; liana; open country; Jh.

132.7.11b **Dissochaeta rostrata** Korth. var. **malayana** (Furtado) J.F. Maxwell, **M22** 320, **M24** 159; liana; forest; Tg, Sl.

132.7.12 **Dissochaeta spectabilis** J.F. Maxwell, **M22** 321, **M24** 160; liana; montane forest; Cameron Highlands, Ph.

132.7.13 **Dissochaeta vacillans** (Blume) Blume, **M24** 160; liana; montane forest; Pk, Ph, Sl.

132.7.14a **Dissochaeta velutina** Blume var. **reticulata** (Blume) J.F. Maxwell, **M22** 321, **M24** 160; liana; montane forest; Genting Highlands, Sl.

132.7.14b **Dissochaeta velutina** Blume var. **velutina**, **M24** 160; liana; montane forest; Pk, Ph, Sl, Ml.

132.8.1 **Lijndenia laurina** Zoll. & Moritzi, **B34** 122; *Memecylon oligoneurum* Blume, **FMP1** 811 '*oligoneuron*', **M19** 99, **TFM4** 194; shrub or tree to 15 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.9.1 **Macrolenes dimorpha** (Craib) J.F. Maxwell, **M22** 321, **M24** 160; liana; forest; widespread.

132.9.2a **Macrolenes echinulata** (Naudin) Bakh.*f.* var. **echinulata**, **M24** 161; *Marumia rhodocarpa* Cogn., **FMP1** 795; liana; swampy lowland forest; Ml, Jh, Sp.

132.9.2b **Macrolenes echinulata** (Naudin) Bakh.*f.* var. **esetosa** (Craib) J.F. Maxwell, **M22** 321, **M24** 161; lowland forest; only known from Jabi, Tg.

132.9.3 **Macrolenes glabrata** M.P. Nayar, **M24** 161; liana; montane forest; Genting Highlands, Sl; endemic.

132.9.4 **Macrolenes muscosa** (Blume) Bakh.*f.*, **M24** 161; liana; once from P. Buru, Sp.

132.9.5a **Macrolenes nemorosa** (Jack) Bakh.*f.* var. **nemorosa**, **M24** 161; *Marumia nemorosa* (Jack) Blume var. *nemorosa*, **FMP1** 795; slender liana; forest margins; common throughout.

132.9.5b **Macrolenes nemorosa** (Jack) Bakh.*f.* var. **verrucosa** (Cogn.) J.F. Maxwell, **M24** 161; *Marumia nemorosa* (Jack) Blume var. *verrucosa* (Cogn.) Ridl., **FMP1** 795; slender liana; forest margins; widespread.

132.9.6 **Macrolenes rufolanata** (Ridl.) J.F. Maxwell, **M22** 321, **M24** 162; *Marumia rufolanata* Ridl., **FMP5** 310; liana; forest; Kl, Ph, Sl; ?endemic.

132.9.7 **Macrolenes stellulata** (Jack) Bakh.*f.* var. **ciliatiloba** (Baker *f.*) J.F. Maxwell, **M22** 321, **M24** 162; liana; forest; Kl, Tg, Ph, Jh.

132.10.1 **Medinilla alternifolia** Blume, **M20** 149; *Medinilla scandens* King, **FMP1** 801; root climber to 12 m long; lowland and hill forest; Tg, Pk, Ph, Jh.

132.10.2a **Medinilla clarkei** King var. **clarkei**, **FMP1** 803, **M20** 150; *Medinilla pahangensis* Ridl., **FMP1** 804; *Medinilla perakensis* King, **FMP1** 804; shrub to 2.5 m tall, usually epiphytic; montane forest above 1000 m; Kl, Tg, Pk, Ph, Sl, Ml, Jh.

132.10.2b **Medinilla clarkei** King var. **crassiramea** (M.R. Hend.) J.F. Maxwell, **M20** 156; *Medinilla crassiramea* M.R. Hend., **H35** 103; shrub to 2 m tall, usually epiphytic; montane forest; Cameron Highlands, Ph; endemic variety.

132.10.3 **Medinilla crassifolia** (Reinw. *ex* Blume) Blume, **M20** 157; *Medinilla hasseltii* Blume, **FMP1** 802; epiphytic shrub to 3 m tall; lowland to lower montane forest at 1500 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.10.4 **Medinilla pendens** Ridl., **FMP1** 803, **M20** 164; pendent shrubby epiphyte to 1.5 m long; lowland forest; Kota Tinggi District, Jh; endemic.

132.10.5 **Medinilla penduliflora** Ridl., **FMP1** 804, **M20** 167; epiphytic shrub to 6 m tall; montane forest above 1000 m; Cameron Highlands, Ph.

132.10.6 **Medinilla radicans** (Blume) Blume, **M20** 169; *Medinilla crassinervia auct. non* Blume, **FMP1** 804; shrub to 3 m tall; lowland to montane forest; Pk, Ph, Sl, Ml, Sp.

132.10.7 **Medinilla rubicunda** (Jack) Blume, **M20** 174; once from Pn.

132.10.8 **Medinilla scortechinii** King, **FMP1** 803, **M20** 175; epiphytic shrub to 3 m tall; lowland to montane forest at 1600 m, also on limestone; Kl, Tg, Pk, Ph, Sl, Ml, Jh; endemic.

132.10.9 **Medinilla selangorensis** J.F. Maxwell, **M20** 180; scandent shrub, often epiphytic; montane forest at 1600–2000 m; Ph, Sl; endemic.

132.10.10 **Medinilla speciosa** (Reinw. *ex* Blume) Blume, **FMP1** 801, **M20** 185; shrub to 3 m tall, often epiphytic; hill forest, 500–1200 m; Pn, Pk, Ph, Sl; endemic.

132.10.11 **Medinilla succulenta** (Blume) Blume, **M20** 187; epiphytic shrub; lowland to montane forest; Kl, Pk, Ph, Sl, Jh.

132.10.12a **Medinilla varingiifolia** (Blume) M.P. Nayar var. **bakhuizenii** (M.P. Nayar) J.F. Maxwell, **M20** 194; *Pachycentria speciosa* Ridl., **FMP1** 806; montane forest; Ph; endemic.

132.10.12b **Medinilla varingiifolia** (Blume) M.P. Nayar var. **varingiifolia**, **M20** 189; *Medinilla heterantha* King, **FMP1** 802 incl. var. *latifolia* King; shrub to 3 m tall, often epiphytic; montane forest 1000–2200 m; Tg, Pk, Ph; endemic.

132.10.13 **Medinilla venusta** King, **FMP1** 802 incl. var. *chionantha* (Stapf) Ridl., **M20** 195; shrub to 5 m tall, sometimes epiphytic; hill and montane forest at 500–1700 m; P. Langkawi, Pk, Ph, Sl.

132.11.1 **Melastoma imbricatum** Wall., **FMP1** 765, **C27** 299; shrub; mountains.

132.11.2 **Melastoma malabathricum** L., **FMP1** 764, **C27** 300; *Melastoma normale* Don, **FMP1** 765; *Melastoma polyanthum* Blume, **FMP1** 765; *Melastoma scabrum* Ridl., **FMP1** 766; shrub to 3 m tall; secondary growth in lowlands and hills; throughout.

132.11.3 **Melastoma molle** Wall.; **C27** 299; *Melastoma perakense* Ridl., **FMP1** 764 in part; low shrub; dense forests, often near streams; scattered in the north.

132.11.4 **Melastoma muticum** Ridl., **FMP1** 766, **C27** 300; *Melastoma perakense* Ridl., **FMP1** 764 in part; shrub; hill forest; widespread.

132.11.5 **Melastoma sanguineum** Sims, **C27** 301; *Melastoma schizocarpa* Ridl., **FMP1** 764; shrub to 2 m tall; open places; north and the east coast.

132.12.1a **Memecylon acuminatum** Sm. var. **acuminatum**, **FMP1** 817, **M21** 57, **TFM4** 187; tree to 15 m tall; lowland to montane forest at 1200 m; Kd, Kl, Pk, Ph, Sl, Jh, Sp; endemic.

132.12.1b **Memecylon acuminatum** Sm. var. **flavescens** C.B. Clarke, **M21** 58, **TFM4** 187; tree to 15 m tall; hill forest; Pn, Ml; endemic.

132.12.2 **Memecylon amplexicaule** Roxb., **FMP1** 815, **M21** 58, **TFM4** 187; tree to 18 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, NS, Ml, Jh, Sp.

132.12.3 **Memecylon caeruleum** Jack, **FMP1** 816, **M21** 61, **TFM4** 188; shrub or small tree to 12 m tall; lowlands near the sea; Ps, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

132.12.4 **Memecylon campanulatum** C.B. Clarke, **FMP1** 818, **M21** 63, **TFM4** 188; tree to 20 m tall; lowland forest; Tg, Ph, Sl, Ml, Jh, Sp.

132.12.5 **Memecylon cantleyi** Ridl., **FMP1** 818, **M21** 64, **TFM4** 188; shrub or tree to 15 m tall; lowland to lower montane forest at 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.6 **Memecylon cinereum** King, **FMP1** 817, **M21** 66, **TFM4** 187; shrub or small tree to 4 m tall; hill and montane forest; Kl, Tg, Pk, Ph, Sl, ?Sp; endemic.

132.12.7 **Memecylon corticosum** Ridl., **M21** 67, **TFM4** 187; shrub to 3 m tall; lowland forest, also on limestone; Kl, Tg, Ph, Jh.

132.12.8a **Memecylon dichotomum** (C.B. Clarke) King var. **dichotomum**, **FMP1** 812 incl. var. *eugeniiflorum* (Ridl.) Ridl., **M21** 69, **TFM4** 189; tree to 12 m tall; lowland and hill forest to 1500 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

132.12.8b **Memecylon dichotomum** (C.B. Clarke) King var. **rotundatum** (Craib) J.F. Maxwell, **M21** 71, **TFM4** 189; *Memecylon gracilipes* (*non* C.B. Rob.) Ridl., **FMP1** 811; *Memecylon perakense* Merr., **M28** 132; tree to 6 m tall; Pk.

132.12.9a **Memecylon edule** Roxb. var. **edule**, **FMP1** 819, **M21** 72, **TFM4** 189; tree to 12 m tall; lowland forest, often near the sea; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.9b **Memecylon edule** Roxb. var. **ovatum** (Sm.) C.B. Clarke, **M21** 74, **TFM4** 190; *Memecylon laxiflorum* Wall. *ex* Ridl., **FMP1** 815; tree to 18 m tall; open places, often near the sea, also on limestone; Ps, Kd, Pn, Tg, Pk, Ph, Sl, Ml, Jh, Sp.

132.12.10 **Memecylon excelsum** Blume, **M21** 76, **TFM4** 190; *Memecylon heteropleurum* Blume, **FMP1** 813; *Memecylon maingayi* C.B. Clarke, **FMP1** 813; tree to 18 m tall; lowland and hill forest to 1200 m; Kd, Kl, Tg, Pk, Ph, NS, Ml, Jh.

132.12.11 **Memecylon floridum** Ridl., **FMP1** 816, **M21** 78, **TFM4** 190; tree to 17 m tall; hill forest to 1200 m; Kl, Tg, Pk, Ph, Sl, NS, Sp; endemic.

132.12.12 **Memecylon fruticosum** King, **FMP1** 812, **M21** 79, **TFM4** 187; *Memecylon epiphyticum* King, **FMP1** 811; *Memecylon tenuifolium* Ridl., **FMP1** 812; shrub to 3 m tall, often epiphytic; lowland and hill forest; Pn, Tg, Pk, Ph, Sl, NS, Sp.

132.12.13 **Memecylon garcinioides** Blume, **FMP1** 818, **M21** 81, **TFM4** 191; shrub or tree to 15 m tall; lowland and hill forest to 1200 m; Kl, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.14 **Memecylon globosum** Bakh.*f.*, **M21** 82, **TFM4** 186; shrub to 5 m tall; hill forest; Jh, Sp.

132.12.15 **Memecylon hullettii** King, **FMP1** 813, **M19** 83, **TFM4** 187; shrub to 3 m tall; lowland and hill forest; Jh; endemic.

132.12.16 **Memecylon intermedium** Blume, **FMP1** 819, **M21** 84, **TFM4** 192; tree to 25 m tall; lowland to montane forest at 1800 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh.

132.12.17 **Memecylon kunstleri** King, **FMP1** 814, **M21** 86, **TFM4** 192; tree to 20 m tall; lowland and hill forest; Kd, Pn, Pk, Sl; endemic.

132.12.18 **Memecylon lilacinum** Zoll. & Moritzi, **M21** 87, **TFM4** 192; *Memecylon laevigatum* Blume, **FMP1** 817; *Memecylon myrsinoides* Blume, **FMP1** 817; tree to 25 m tall; lowland and hill forest to 1200 m; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, Ml, Jh.

132.12.19 **Memecylon malaccense** (C.B. Clarke) Ridl., **FMP1** 816, **M21** 90, **TFM4** 187; shrub to 4 m tall; only known from type, Ml; endemic.

132.12.20 **Memecylon megacarpum** Furtado, **M21** 91, **TFM4** 193; tree to 15 m tall; lowland to montane forest at 1800 m; Kd, Pn, Kl, Tg. Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.21 **Memecylon minutiflorum** Miq., **FMP1** 818, **M21** 93, **TFM4** 193; tree to 25 m tall; lowland to montane forest at 1800 m; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.22 **Memecylon oleifolium** Blume, **FMP1** 814 '*oleaefolium*', **M21** 95, **TFM4** 193; tree to 12 m tall; lowland and hill forest to 1200 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.23 **Memecylon paniculatum** Jack, **M21** 101, **TFM4** 194; *Memecylon caloneuron* Miq., **FMP1** 812; tree to 30 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ml, Jh, Sp.

132.12.24 **Memecylon pauciflorum** Blume, **FMP1** 816, **M21** 102, **TFM4** 194; tree to 8 m tall; lowland and hill forest to 1200 m, often on limestone; P. Langkawi, Pn, Kl, Tg, Pk, Sl, Jh, Sp.

132.12.25 **Memecylon pubescens** (C.B. Clarke) King, **FMP1** 814, **M21** 104, **TFM4** 195; tree to 30 m tall; lowland and hill forest to 1200 m; Kd, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.12.26 **Memecylon wallichii** Ridl., **FMP1** 813, **M21** 106, **TFM4** 187; *Memecylon longifolium* (*non* Cogn.) Ridl., **FMP1** 814; small tree to 5 m tall; lowland and hill forest; Pn, Kl, Pk, Ml; endemic.

132.13.1 **Ochthocharis borneensis** Blume, **FMP1** 775, **H16** 16; shrub to 2 m tall; mangroves, along river mouths; Jh, Sp.

132.13.2 **Ochthocharis decumbens** King, **FMP1** 775, **H16** 18; *Ochthocharis sylvestris* Ridl., **FMP1** 775; shrub to 1 m tall; wet and swampy places in the lowlands; Sl, Jh.

132.13.3 **Ochthocharis javanica** Blume, **FMP1** 775, **H16** 15; shrub to 2 m tall; mangroves and other tidal areas; Ml, Jh, Sp.

132.13.4 **Ochthocharis ovalifolia** Ridl., **FMP1** 774, **H16** 28; shrub; swampy lowland forest; only known from type (?lost), Sedenah, Jh; [doubtful species].

132.13.5 **Ochthocharis paniculata** Korth., **FMP1** 774, **H16** 20; shrub to 3 m tall; swampy lowland forest; Sp.

132.14.1 **Osbeckia chinensis** L., **FMP1** 762, **H13** 52; herb to 60 cm tall; open country; once from Padang Pa'anat, Kl.

132.14.2 **Osbeckia nepalensis** Hook., **H13** 67; shrub to 2 m tall; damp open places; Cameron Highlands, Ph; ? recent range extension, no collections before 1960s.

132.14.3 **Osbeckia rubicunda** Arn., **H13** 89; *Osbeckia perakensis* Ridl., **FMP1** 762; shrub about 5 m tall; montane forest; twice from Pk.

132.15.1 **Oxyspora acutangula** King, **FMP1** 769, **M25** 221; *Oxyspora hirticalyx* (Ridl.) Ridl., **FMP1** 769; shrub; montane forest; Pk; ?endemic.

132.15.2 **Oxyspora bullata** (Griff.) J.F. Maxwell, **M25** 216 and 221; *Allomorphia malaccensis* Ridl., **FMP1** 770; *Allomorphia bullata* (Griff.) Cogn., **FMP1** 771; shrub to 2 m tall; lowland forests; widespread; ?endemic.

132.15.3 **Oxyspora collina** (Ridl.) Ridl., **FMP1** 768; shrub to 2 m tall; lowland forest; P. Langkawi, Pk; ?endemic.

132.15.4 **Oxyspora curtisii** King, **FMP1** 769, **M25** 219; *Allomorphia alata* Scort. *ex* King, **FMP1** 770; shrub; montane forest; Kd, Kl, Pk; ?endemic.

132.15.5 **Oxyspora exigua** (Jack) J.F. Maxwell, **M25** 216, 220, 221 and 222; *Allomorphia exigua* (Jack) Blume, **FMP1** 770 incl. var. *capillaris* (Cogn. *ex* Ridl.) Ridl.; *Allomorphia porphyranthera* Ridl., **FMP1** 770; shrub to 1 m tall; rocky places in hill forests; Pn, Pk; ?endemic.

132.15.6 **Oxyspora floribunda** Ridl., **FMP1** 768; shrub to 5 m tall; montane forest; Pk; ?endemic.

132.15.7 **Oxyspora hirta** Ridl., **FMP1** 768; shrub; montane forest; Gg Tahan, Ph; ?endemic.

132.15.8 **Oxyspora hispida** Ridl., **FMP1** 767; shrub; montane forest; Gg Mengkuang Lebah, Sl; endemic.

132.15.9 **Oxyspora rosea** (Ridl.) Ridl., **FMP1** 768, **M25** 222; low shrub; lowland forest; Ph; ?endemic.

132.15.10 **Oxyspora scabrida** Ridl., **FMP5** 310; shrub; montane forest; Gg Tahan, Ph; ?endemic.

132.15.11 **Oxyspora sublepidota** (King) J.F. Maxwell, **M25** 218 and 222; *Oxyspora microcarpa* Ridl., **FMP1** 767; shrub to 3 m tall; montane forest; Ph.

132.15.12 **Oxyspora stellulata** King, **FMP1** 767; shrub or small tree to 8 m tall; montane forest; Kl, Pk.

132.15.13 **Oxyspora wrayi** (King) J.F. Maxwell, **M25** 218; *Campimia wrayi* (King) Ridl., **FMP1** 778; shrub about 1 m tall; montane forest; Taiping Hills, Pk; ?endemic.

132.16.1 **Pachycentria constricta** (Blume) Blume, **M20** 202; *Pachycentria tuberculata* Korth., **FMP1** 805; shrub to 1 m tall, on trees or rocks; lowland to montane forest; Pn, Kl, Pk, Ph, Sl, Ml, Jh, Sp.

132.16.2 **Pachycentria maingayi** (C.B. Clarke) J.F. Maxwell, **M20** 203; *Medinilla maingayi* C.B. Clarke, **FMP1** 803; epiphytic shrub to 1 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, Ml, Jh, Sp.

132.16.3 **Pachycentria microsperma** Becc., **M20** 207; epiphytic shrub to 2 m tall; on limestone; once from Bt Cheras, Ph.

132.17.1 **Phyllagathis cordata** Ridl., **FMP1** 793, **K29** 223; creeping herb; on sandstone rocks and cliffs; Ulu Endau, Jh; endemic.

132.17.2 **Phyllagathis griffithii** (Hook.*f. ex* Triana) King, **FMP1** 793; 'herb' with slender creeping woody stem; lowland forest; widespread; ?endemic.

132.17.3 **Phyllagathis hispida** King, **FMP1** 794; creeping herb; lowland and montane forest; widespread; ?endemic.

132.17.4 **Phyllagathis magnifica** A. Weber, **W02** 189; *Phyllagathis tuberculata auct. non* King, **FMP1** 792 in part; shrub to 2.5 m tall; understorey of montane forest; Genting Highlands, Ph/Sl; endemic.

132.17.5 **Phyllagathis praetermissa** A. Weber, **W04** 21; creeping herb; lowland to montane forest; Pk, Ph, Sl, NS.

132.17.6 **Phyllagathis rotundifolia** (Jack) Blume, **FMP1** 794; creeping herb; lowland and montane forest; widespread.

132.17.7 **Phyllagathis scortechinii** King, **FMP1** 793; creeping herb; montane forest; Pk, Sl; ?endemic.

132.17.8 **Phyllagathis stolonifera** Kiew, **K29** 224; *Phyllagathis maxwellii* B.C. Stone & A. Weber, **S70** 307; herb, sometimes stoloniferous to 1 m long; on rocks in hill and heath forest; Jh, Ph; endemic.

132.17.9 **Phyllagathis stonei** A. Weber, **W02** 192; unbranched 'shrub' to 2 m tall; hill and montane forest; Genting Highlands and Ulu Gombak, Sl; endemic.

132.17.10 **Phyllagathis tuberculata** King, **FMP1** 792 in part, **W02** 187; unbranched shrub to 2 m tall; on damp rocks in montane forest; Gg Bujong Malacca, Pk; endemic.

132.18.1 **Plethiandra sessiliflora** (Cogn.) Ridl., **FMP1** 806; epiphytic shrub to 1 m tall; mangroves or on limestone; Sl, Jh, Sp; endemic.

132.19.1 **Pogonanthera pulverulenta** (Jack) Blume, **FMP1** 805, **M20** 209; shrub to 1.5 m tall, on trees or rocks; lowland and hill forest; Pn, Pk, Ph, Sl, Jh.

132.20.1 **Pternandra coerulescens** Jack, **FMP1** 808, **M23** 26, **TFM4** 196; *Pternandra capitellata* Jack, **FMP1** 808; *Pternandra jackiana* Ridl., **FMP1** 808; tree to 20 m tall; lowland and hill forest; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.20.2 **Pternandra echinata** Jack, **FMP1** 809 incl. vars. *bracteata* Ridl. and *pubescens* (Decne.) King, **M23** 42, **TFM4** 197; tree to 20 m tall; lowland and hill forest to 1200 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

132.20.3 **Pternandra galeata** (Korth.) Ridl., **FMP1** 808, **M23** 49, **TFM4** 198; tree to 22 m tall; wet lowland forest, swamp forest; Ph, Jh.

132.20.4 **Pternandra tuberculata** (Korth.) M.P. Nayar, **M23** 73, **TFM4** 198; *Pternandra paniculata* Benth. *ex* Ridl., **FMP1** 809; tree to 20 m tall; lowland and hill forest to 1200 m; Pn, Tg, Pk, Sl, Ml, Sp.

132.21.1 **Sarcopyramis napalensis** Wall., **FMP1** 792 'nepalensis', **H14** 180; herb to 15 cm tall; montane forest; Ph.

132.22.1 **Sonerila albiflora** Stapf, **FMP1** 782; subshrub to 50 cm tall; montane forest; widespread; ?endemic.

132.22.2 **Sonerila barbata** Ridl., **FMP1** 789; herb to 50 cm tall; lowland forest; Kl; ?endemic.

132.22.3 **Sonerila bellula** Ridl., **FMP1** 787; herb to 10 cm tall; on shady forest; Gg Banang, Jh; ?endemic.

132.22.4 **Sonerila bicolor** Stapf, **FMP1** 792; herb to 25 cm tall; hill forest; Pk, Sl; ?endemic.

132.22.5 **Sonerila brachyantha** Stapf, **FMP1** 791; herb to 20 cm tall; montane forest; widespread; ?endemic.

132.22.6 **Sonerila bracteata** Stapf, **FMP1** 788; hill forest; Pk; ?endemic.

132.22.7 **Sonerila caesia** Stapf, **FMP1** 788; herb to 10 cm tall; montane forest; Pk, Ph; ?endemic.

132.22.8 **Sonerila calaminthifolia** Stapf & King, **FMP1** 780; wiry herb to 30 cm tall; montane forest; Gg Batu Puteh, Pk; endemic.

132.22.9 **Sonerila calophylla** Ridl., **FMP1** 786; succulent herb to 20 cm tall; Gg Jerai, Kg; ?endemic.

132.22.10 **Sonerila calycula** Stapf, **FMP1** 789; herb to 10 cm tall; lowland forest; Ph; ?endemic.

132.22.11a **Sonerila capitata** Stapf var. **capitata**, **FMP1** 787; *Sonerila whittyi* M.R. Hend.; **H32** 249; herb to 30 cm tall; montane forest; Pk, Sl; ?endemic.

132.22.11b **Sonerila capitata** Stapf var. **longipetiolata** Ridl., **FMP1** 788; herb to 30 cm tall; montane forest; Kd, Ph; ?endemic.

132.22.12 **Sonerila congesta** Stapf, **FMP1** 785; herb to 10 cm tall; hill forest; Gg Chinchang, P. Langkawi; ?endemic.

132.22.13 **Sonerila costulata** Stapf, **FMP1** 790; herb to 5 cm tall; lowland forest; Jh; ?endemic.

132.22.14a **Sonerila cyclaminella** Stapf var. **canescens** Stapf, **FMP1** 786; herb to 30 cm tall; lower montane forest; Pk, Sl; ?endemic.

132.22.14b **Sonerila cyclaminella** Stapf var. **cyclaminella**, **FMP1** 786; herb to 30 cm tall; lower montane forest; Pk; ?endemic.

132.22.15 **Sonerila elatostemoides** Stapf, **FMP1** 791; herb to 30 cm tall; montane forest; Gg Bubu, Pk; ?endemic.

132.22.16 **Sonerila elliptica** Stapf, **FMP1** 784; fleshy herb to 25 cm tall; on limestone; Pk; endemic.

132.22.17 **Sonerila erecta** Jack, **FMP1** 780; wiry herb to 50 cm tall; montane forest; Pn, Pk, Ph; endemic.

132.22.18 **Sonerila fraseri** Kiew, **K45** 68; herb to 12 cm tall; lower montane forest at 1500 m; Pine Tree Hill, Fraser's Hill, Ph; endemic.

132.22.19 **Sonerila gimlettei** Ridl., **FMP1** 789; herb to 15 cm tall; lowland forest; Kuala Lebir, Kl; ?endemic.

132.22.20 **Sonerila glabriflora** Stapf, **FMP1** 787; herb to 15 cm tall; Larut, Pk; ?endemic.

132.22.21 **Sonerila griffithii** C.B. Clarke, **FMP1** 786; slender fleshy herb to 15 cm tall; montane forest; Mt Ophir, Ml; ?endemic.

132.22.22 **Sonerila heterostemon** Naudin, **FMP1** 787; herb to 50 cm tall; lowland forest; widespread.

132.22.23 **Sonerila hirsuta** (Stapf) Ridl., **FMP1** 781; herb to 15 cm tall; montane forest; widespread; ?endemic.

132.22.24 **Sonerila integrifolia** Stapf, **FMP1** 788; herb; lowland to montane forest; common on the Main Range.

132.22.25 **Sonerila linearis** Hook.*f.*, **FMP1** 780; slender herb to 40 cm tall; hill forest; Gg Jerai, Kd; endemic.

132.22.26a **Sonerila macrophylla** Stapf var. **laxipilosa** Stapf, **FMP1** 791; herb to 20 cm tall; forest; Pn, Pk; ?endemic.

132.22.26b **Sonerila macrophylla** Stapf var. **macrophylla**, **FMP1** 791; herb to 20 cm tall; forest; Pk; ?endemic.

132.22.27 **Sonerila microcarpa** Stapf, **FMP1** 790; herb to 15 cm tall; lowland forest; Pk; ?endemic.

132.22.28 **Sonerila mollis** Stapf, **FMP1** 783; herb to 50 cm tall; upper montane forest; Gg Batu Puteh, Pk; ?endemic.

132.22.29 **Sonerila moluccana** Roxb., **K09** 82; *Sonerila begoniifolia* Blume, **FMP1** 790; herb to 15 cm tall; lowland forest; widespread.

132.22.30 **Sonerila muscicola** Stapf, **FMP1** 785; herb to 15 cm tall; on trees; P. Langkawi; ?endemic.

132.22.31 **Sonerila nidularia** Stapf, **FMP1** 789; herb; montane forest; Pk; ?endemic.

132.22.32 **Sonerila nodosa** Ridl., **FMP1** 785; fleshy herb to 10 cm tall; montane forests; Pk; ?endemic.

132.22.33 **Sonerila pallida** Stapf, **FMP1** 783; herb; montane forest; scattered.

132.22.34a **Sonerila picta** Korth. var. **concolor** Ridl., **FMP1** 785; succulent herb to 30 cm tall; hill forest; widespread.

132.22.34b **Sonerila picta** Korth. var. **maculata** Ridl., **FMP1** 785; succulent herb to 30 cm tall; montane forest; widespread.

132.22.34c **Sonerila picta** Korth. var. **picta**, **FMP1** 785; succulent herb to 30 cm tall; lowland and hill forest; widespread.

132.22.35 **Sonerila populifolia** Stapf, **FMP1** 784; herb to 25 cm tall; lowland and hill forest.

132.22.36a **Sonerila prostrata** Ridl. var. **johorensis** (M.R. Hend.) M.P. Nayar, **N01** 806; *Sonerila johorensis* M.R. Hend.; **H33** 411; creeping herb; on rocks; Gg Panti, Jh; endemic.

132.22.36b **Sonerila prostrata** Ridl. var. **prostrata**, **FMP1** 782; slender mat-forming creeping herb; shady rocks; Cameron Highlands, Ph; Klang Gates, Sl; endemic.

132.22.37 **Sonerila ramosa** Ridl., **FMP1** 782; subshrub to 50 cm tall; montane forest; Gg Mengkuang, Sl; ?endemic.

132.22.38 **Sonerila repens** Stapf, **FMP1** 784; fleshy creeping herb; hill forest; Pk, Ph; ?endemic.

132.22.39 **Sonerila rudis** Stapf, **FMP1** 783; herb to 30 cm tall; montane forest; widespread; ?endemic.

132.22.40 **Sonerila saxosa** Stapf, **FMP1** 786; herb to 15 cm tall; on shady rocks; Penang Hill; ?endemic.

132.22.41 **Sonerila setosa** Ridl., **FMP1** 789; herb to 20 cm tall; montane forest; Gg Tahan, Ph; ?endemic.

132.22.42 **Sonerila succulenta** Stapf, **FMP1** 784; succulent herb; montane forest; Pk; ?endemic.

132.22.43a **Sonerila suffruticosa** Stapf var. **lasiantha** Ridl., **FMP1** 783; shrublet to 50 cm tall; montane forest; Gg Bubu, Sl; ?endemic.

132.22.43b **Sonerila suffruticosa** Stapf var. **suffruticosa**, **FMP1** 783; shrublet to 50 cm tall; montane forest; Gg Bubu, Pk; ?endemic.

132.22.44 **Sonerila tenera** Royle, **FMP1** 781; herb to 15 cm tall; on limestone; P. Langkawi.

132.22.45 **Sonerila tenuifolia** Blume, **FMP1** 781; herb to 30 cm tall; on damp rocks in montane forest; widespread.

133. MELIACEAE

133.1.1 **Aglaia angustifolia** Pannell, **TFM4** 211, **P04** 337, **FMı12** 309; unbranched tree to 4 m tall; lowland and hill forest to 1000 m; Jh.

133.1.2 **Aglaia argentea** Blume, **FMP1** 405, **TFM4** 211, **P04** 125, **FMı12** 237; *Aglaia splendens* (Koord. & Valeton) Koord. & Valeton, **FMP1** 405; tree to 30 m tall; lowland forest; widespread.

133.1.3 **Aglaia coriacea** Korth. *ex* Miq., **TFM4** 213, **P04** 297, **FMı12** 295; tree to 5 m tall; lowland forest; Ph, Sl, Jh.

133.1.4 **Aglaia crassinervia** Kurz *ex* Hiern, **P04** 213, **FMı12** 267; *Aglaia cinerea* King, **FMP1** 404; *Aglaia sp. 6*, **TFM4** 229; tree to 20 m tall; lowland and hill forest to 800 m; Kd, Pk, Ph, Sl, NS.

133.1.5 **Aglaia cucullata** (Roxb.) Pellegr., **TFM4** 214, **P04** 58, **FMı12** 213; *Amoora cucullata* Roxb., **FMP1** 399; tree to 30 m tall; tidal rivers, back mangrove, lowland forest; Pk, Ph, Jh, Sp.

133.1.6 **Aglaia densitricha** Pannell, **P04** 90, **FMı12** 224; tree to 5 m tall; lowland forest; only known from type, Belara F.R., Tg; endemic.

133.1.7 **Aglaia edulis** (Roxb.) Wall., **P04** 229, **FMı12** 272; tree to 20 m tall; lowland and hill forest; Kd, Ph, Sl.

133.1.8 **Aglaia eleagnoidea** (A. Juss.) Benth., **P04** 143, **FMı12** 243; shrub or tree to 10 m tall; once from Kaki Bukit, Ps.

133.1.9 **Aglaia elliptica** Blume, **TFM4** 214, **P04** 275, **FMı12** 288; *Aglaia tembelingensis* M.R. Hend., **H33** 94; tree to 20 m tall; lowland forest; Kd, Tg, Pk, Ph, Sl, Jh, Sp.

133.1.10 **Aglaia erythrosperma** Pannell, **P04** 76, **FMı12** 219; *Aglaia sp. 2*, **TFM4** 228; tree to 35 m tall; lowland and hill forest to 1300 m; Ph, NS, Jh.

133.1.11 **Aglaia eximia** Miq., **TFM4** 215, **P04** 121, **FMı12** 236; *Aglaia argentea* Miq. var. *eximia* (Miq.) Miq., **FMP1** 405; tree to 15 m tall; lowland forest; Kd, Kl, Sl.

133.1.12 **Aglaia exstipulata** (Griff.) W. Theob., **TFM4** 215, **P04** 320, **FMı12** 303; *Aglaia griffithii* (Hiern) Kurz, **FMP1** 409; tree to 25 m tall; lowland and hill forest to 1400 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

133.1.13 **Aglaia forbesii** King, **FMP1** 406, **TFM4** 215, **P04** 207, **FMı12** 265; *Aglaia humilis* King, **FMP1** 407, **TFM4** 218; tree to 35 m tall; lowland and hill forest to 900 m; widespread.

133.1.14 **Aglaia foveolata** Pannell, **P04** 211, **FMı12** 266; *Aglaia sp. 7*, **TFM4** 230; tree to 22 m tall; lowland and hill forest to 900 m; Kd, Tg, Ph, Jh.

133.1.15 **Aglaia glabrata** Teijsm. & Binn., **P04** 177, **FMı12** 254; tree to 20 m tall; lowland forest; Tg, Ph.

133.1.16 **Aglaia grandis** Korth. *ex* Miq., **TFM4** 217, **P04** 111, **FMı12** 232; *Aglaia lanuginosa* King, **FMP1** 407; tree to 27 m tall; lowland forest; Kl, Pk, Ph, NS, Jh.

133.1.17 **Aglaia hiernii** King, **FMP1** 408, **TFM4** 218, **P04** 341, **FMı12** 310; *Aglaia curtisii* King, **FMP1** 408; tree to 30 m tall; lowland and hill forest; Kd, Pk, Sl, Jh.

133.1.18 **Aglaia korthalsii** Miq., **P04** 167, **FMı12** 251; *Aglaia sp. 4*, **TFM4** 228; tree to 10 m tall; lowland forest, also cultivated; Kd, Ph, Jh.

133.1.19 **Aglaia lawii** (Wight) Saldanha *ex* Ramamoorthy, **P04** 97, **FMı12** 251; *Amoora maingayi* Hiern, **FMP1** 400; *Lansium pedicellatum* Hiern, **FMP1** 411; *Aglaia oligocarpa* Miq., **TFM4** 221; tree to 15 m tall; lowland forest; Kl, Pk, Sl.

133.1.20 **Aglaia leptantha** Miq., **P04** 201, **FMı12** 228; *Aglaia glabriflora* Hiern, **FMP1** 404, **TFM4** 217; tree to 30 m tall; lowland forest; Kd, Pk, Ph, NS, Ml, Sp.

133.1.21 **Aglaia leucophylla** King, **FMP1** 403, **TFM4** 218, **P04** 226, **FMı12** 271; *Aglaia kunstleri* King, **FMP1** 406; *Aglaia heteroclita* King, **FMP1** 410; tree to 20 m tall; lowland and hill forests to 700 m; Kd, Kl, Tg, Pk, Sl, NS, Jh.

133.1.22 **Aglaia macrocarpa** (Miq.) Pannell, **P04** 65, **FMı12** 215; *Amoora rubescens* Hiern, **FMP1** 399; *Aglaia rubescens* (Hiern) Pannell, **TFM4** 223; tree to 35 m tall; lowland to montane forest at 1750 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS, Jh, Sp.

133.1.23 **Aglaia macrostigma** King, **FMP1** 410, **TFM4** 219, **P04** 236, **FMı12** 275; tree to 25 m tall; lowland and hill forest to 1000 m; Pk, Sl, NS; endemic.

133.1.24 **Aglaia malaccensis** (Ridl.) Pannell, **TFM4** 219, **P04** 70, **FMı12** 216; *Amoora malaccensis* Ridl., **FMP1** 399; tree to 27 m tall; lowland and hill forest to 700 m; Kd, Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh.

133.1.25 **Aglaia membranifolia** King, **FMP1** 406, **TFM4** 221, **P04** 316, **FMı12** 301; tree to 10 m tall; lowland forest; Pk, Ph.

133.1.26 **Aglaia monozyga** Harms, **P04** 311, **FMı12** 299; tree to 10 m tall; once from Bt Kajang, Tg.

133.1.27 **Aglaia multinervis** Pannell, **P04** 84, **FMı12** 222; *Amoora lanceolata* Hiern, **FMP1** 399; *Aglaia sp. 3*, **TFM4** 228; tree to 35 m tall; lowland forest to 400 m; Pk, Sl, Ml, Jh, Sp.

133.1.28 **Aglaia odoratissima** Blume, **FMP1** 404, **TFM4** 221, **P04** 237, **FMı12** 276; tree to 12 m tall; lowland and hill forest to 1370 m; throughout.

133.1.29 **Aglaia oligophylla** Miq., **FMP1** 403, **TFM4** 222, **P04** 302, **FMı12** 297; *Aglaia fusca* King, **TFM4** 216; tree to 20 m tall; lowland forest; Kd, Tg, Pk, Ph, Jh, Sp.

133.1.30 **Aglaia pachyphylla** Miq., **P04** 117, **FMı12** 234; *Aglaia barbatula* Koord. & Valeton, **TFM4** 213; tree to 40 m tall; lowland and hill forest; Kd, Kl, Pk, Ph, Jh.

133.1.31 **Aglaia palembanica** Miq., **FMP1** 409, **TFM4** 223, **P04** 323, **FMı12** 304; tree to 5 m tall; lowland forest; Ph, Sl, Ml, Sp.

133.1.32 **Aglaia perviridis** Hiern, **P04** 198, **FMı12** 260; *Aglaia kingiana* Ridl., **FMP1** 404, **TFM4** 230; tree to 12 m tall; once from Gopeng, Pk.

133.1.33 **Aglaia rubiginosa** (Hiern) Pannell, **TFM4** 225, **P04** 92, **FMı12** 260; *Amoora rubiginosa* Hiern, **FMP1** 398; tree to 35 m tall; lowland forest including peat swamps; Pk, Sl, Ml, Jh, Sp.

133.1.34 **Aglaia rufibarbis** Ridl., **FMP1** 409, **TFM4** 225, **P04** 344, **FMı12** 312; tree to 10 m tall; lowland forest; Kl, Tg, Ph, Ml.

133.1.35 **Aglaia rufinervis** (Blume) Bentv., **P04** 317, **FMı12** 302; *Aglaia trichostemon* C. DC., **FMP1** 407, **TFM4** 227; tree to 15 m tall; lowland forest; Kd, Sp.

133.1.36 **Aglaia rugulosa** Pannell, **P04** 73, **FMı12** 217; *Aglaia sp. 1*, **TFM4** 227; tree to 12 m tall; lowland and hill forest; Tg, ?Pk, Ph, Jh.

133.1.37 **Aglaia scortechinii** King, **FMP1** 403, **TFM4** 230, **P04** 175, **FMı12** 254; tree to 30 m tall; lowland and hill forest; Pk, Sl.

133.1.38 **Aglaia sexipetala** Griff., **P05** 348, **FMı12** 268; *Aglaia aspera* Teijsm. & Binn., **P04** 217; *Aglaia sp. 5*, **TFM4** 229; tree to 20 m tall; lowland forest; Ph, NS.

133.1.39 **Aglaia silvestris** (M. Roem.) Merr., **P04** 193, **FMı12** 259; *Aglaia ganggo* Miq., **TFM4** 217; tree to 30 m tall; lowland and hill forest; Kd, Ph, Sl.

133.1.40 **Aglaia simplicifolia** (Bedd.) Harms, **P04** 306, **FMı12** 298; ?*Beddomea racemosa* Ridl., **FMP1** 414; *Aglaia meliosmoides* Craib, **TFM4** 219; tree to 8 m tall; lowland forest; Tg, Sl, ?Jh, ?Sp.

133.1.41 **Aglaia speciosa** Blume, **P04** 164, **FMı12** 250; tree to 35 m tall; lowland and hill forest; Pk, Ph.

133.1.42 **Aglaia spectabilis** (Miq.) S.S. Jain & Bennet, **P04** 79, **FMı12** 221; *Amoora ridleyi* King, **FMP1** 398; *Aglaia ridleyi* (King) Pannell, **TFM4** 223; tree to 40 m tall; lowland forest to 300 m; Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

133.1.43 **Aglaia squamulosa** King, **FMP1** 406, **TFM4** 225, **P04** 129, **FMı12** 239; tree to 20 m tall; lowland forest; Pk, Ph, Jh.

133.1.44 **Aglaia tenuicaulis** Hiern, **FMP1** 408, **TFM4** 226, **P04** 313, **FMı12** 301; tree to 10 m tall; lowland and hill forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Ph, Sl, Jh, Sp.

133.1.45 **Aglaia teysmanniana** (Miq.) Miq., **TFM4** 226, **P04** 108, **FMı12** 231; tree to 15 m tall; lowland forest; P. Langkawi, Ph, Sl.

133.1.46 **Aglaia tomentosa** Teijsm. & Binn., **TFM4** 226, **P04** 331, **FMı12** 306; *Aglaia cordata* Hiern, **FMP1** 409, **TFM4** 213; tree to 15 m tall; lowland and hill forest to 1000 m; Kd, Pn, Kl, Tg, Pk, Sl, NS, Jh, Sp.

133.1.47 **Aglaia variisquama** Pannell, **P04** 153, **FMı12** 245; tree to 20 m tall; lowland forest; Pk, Jh.

133.1.48 **Aglaia yzermannii** Boerl. & Koord., **TFM4** 227, **P04** 244, **FMı12** 278; *Aglaia salicifolia* Ridl., **FMP1** 403; rheophytic tree to 5 m tall; on riverbanks; Kl, Tg, Pk, Ph.

133.2.1 **Aphanamixis polystachya** (Wall.) R. Parker, **TFM4** 230, **FMı12** 188; *Aphanamixis rohituka* (Roxb.) Pierre, **FMP1** 401; tree to 20 m tall; lowland to montane forest; Kd, Pk, Ph, Sl, NS, Ml, Jh, Sp.

133.2.2 **Aphanamixis sumatrana** (Miq.) Ridl., **FMP1** 400, **TFM4** 231, **FMı12** 194; tree to 6 m tall; lowland and hill forest to 1000 m; Kd, Pn, Pk, Ph, Sl, NS, Ml, Jh, Sp.

133.3.1 **Azadirachta excelsa** (Jack) M. Jacobs, **TFM4** 233, **FMı12** 357; tree to 50 m tall; lowland forest and villages; Pn, Pk, Sl, Ml.

133.4.1 **Chisocheton amabilis** (Miq.) C. DC., **TFM4** 234, **FMı12** 163; tree to 17 m tall; lowland peat swamp and riparian forest; ?Sl, Ph, Jh.

133.4.2 **Chisocheton ceramicus** (Miq.) C. DC., **TFM4** 234, **FMı12** 179; *Chisocheton macrothyrsus* King, **FMP1** 389; tree to 30 m tall; lowland forest; Kd, Kl, Tg, Pk, Ph, Sl, NS.

133.4.3 **Chisocheton erythrocarpus** Hiern, **FMP1** 388, **TFM4** 235, **FMı12** 183; tree to 25 m tall; lowland forest, often near the sea; Kd, Kl, Tg, Ph, NS, Ml, Jh, Sp.

133.4.4a **Chisocheton macrophyllus** King ssp. **fulvescens** Mabb., **TFM4** 235, **FMı12** 178; tree to 35 m tall; lowland to lower montane forest at 1100 m; Kd, Kl, Tg, Pk, Ph, Sl.

133.4.4b **Chisocheton macrophyllus** King ssp. **macrophyllus**, **FMP1** 389, **TFM4** 235, **FMi12** 179; tree to 35 m tall; lowland to lower montane forest at 1100 m; Pn, Kl, Tg, Pk, Ph, Sl, Sp.

133.4.5 **Chisocheton patens** Blume, **TFM4** 235, **FMi12** 167; *Chisocheton glomeratus* Hiern, **FMP1** 389; *Chisocheton divergens* Blume, **FMP1** 390; tree to 30 m tall; lowland forest; Kd, Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

133.4.6 **Chisocheton pauciflorus** King, **FMP1** 387, **TFM4** 237, **FMi12** 173; tree to 16 m tall; lowland forest to 500 m; Kd, Pk, Ph, Sl, NS, Ml, Jh, ?Sp; endemic.

133.4.7 **Chisocheton penduliflorus** Planch. *ex* Hiern, **FMP1** 388, **TFM4** 237, **FMi12** 145; sparsely branching tree to 11 m tall; lowland and hill forest to 900 m; Pn, Kl, Tg, Pk, Ph, NS, Ml.

133.4.8a **Chisocheton pentandrus** (Blanco) Merr. ssp. **paucijugus** (Miq.) Mabb., **TFM4** 238, **FMi12** 183; *Chisocheton spicatus* Hiern, **FMP1** 387; tree to 18 m tall; lowland forest; Pn, Pk, Ph, Sl, Jh, Sp.

133.4.8b **Chisocheton pentandrus** (Blanco) Merr. ssp. **pentandrus**, **TFM4** 237, **FMi12** 182; tree to 18 m tall; dry lowland forest; only known from Jason Bay, Jh.

133.4.9 **Chisocheton perakensis** (Hemsl.) Mabb., **TFM4** 238, **FMi12** 171; *Megaphyllaea perakensis* Hemsl., **FMP1** 386; *Megaphyllaea annulata* (King) Ridl., **FMP1** 386; tree to 16 m tall; hill forest at 900–1150 m; Maxwell's Hill, Pk; endemic.

133.4.10 **Chisocheton sarawakanus** (C. DC.) Harms, **TFM4** 238, **FMi12** 161; *Chisocheton laxiflorus* King, **FMP1** 390; tree to 12 m tall; lowland forest to 250 m; Kl, Tg, Pk, Ph, Sl, NS, Jh.

133.4.11 **Chisocheton tomentosus** (Roxb.) Mabb., **TFM4** 238, **FMi12** 143; *Chisocheton princeps* Hemsl., **FMP1** 388; *Chisocheton rubiginosus* King, **FMP1** 389; tree to 21 m tall; lowland and hill forest; Pn, Kl, Pk, Ph, Sl, Jh.

133.5.1 **Chukrasia tabularis** A. Juss., **TFM4** 256, **FMi12** 355; *Chickrassia tabularis* (A. Juss.) Wight & Arn., **FMP1** 415; tree to 40 m tall; lowland forest; Ps, Kd, Pn, Kl, Tg, Pk, Ph, Sl, NS.

133.6.1 **Cipadessa baccifera** (Roth) Miq., **TFM4** 239, **FMi12** 59; small tree 2–6 m tall; once from base of Gg Baling, Kd.

133.7.1 **Dysoxylum acutangulum** Miq., **FMP1** 393, **TFM4** 240, **FMi12** 129; tree to 37 m tall; lowland and hill forest to 1000 m; Kd, Pk, Ph, Sl, Jh.

133.7.2 **Dysoxylum alliaceum** (Blume) Blume, **TFM4** 240, **FMi12** 106; *Dysoxylum thyrsoideum* Griff., **FMP1** 393; *Dysoxylum costulatum* (Miq.) Miq., **FMP1** 394; *Dysoxylum pulchrum* Ridl., **FMP1** 395; tree to 38 m tall; lowland to montane forest at 1800 m; throughout.

133.7.3 **Dysoxylum angustifolium** King, **FMP1** 392, **TFM4** 242, **FMi12** 112; rheophytic tree to 9 m tall; banks of fast-flowing rivers; Kl, Tg, Ph; endemic.

133.7.4 **Dysoxylum arborescens** (Blume) Miq., **FMP1** 391, **TFM4** 242, **FMi12** 103; tree to 30 m tall; lowland and hill forest to 1500 m; throughout.

133.7.5 **Dysoxylum carolinae** Mabb., **M05** 305, **FMi12** 131; *Dysoxylum sp. 1*, **TFM4** 246; tree to 33 m tall; lowland and hill forest; Kd, Pk, Ph, Sl, NS, Jh, Sp.

133.7.6 **Dysoxylum cauliflorum** Hiern, **FMP1** 396, **TFM4** 242, **FMi12** 86; tree to 30 m tall; lowland and hill forest; throughout.

133.7.7 **Dysoxylum cyrtobotryum** Miq., **TFM4** 243, **FMi12** 123; *Dysoxylum venulosum* King, **FMP1** 393; *Dysoxylum alternatum* Ridl., **FMP1** 397; tree to 27 m or more tall; lowland and hill forest to 800 m; throughout.

133.7.8 **Dysoxylum densiflorum** (Blume) Miq., **FMP1** 396, **TFM4** 243, **FMi12** 81; tree to 45 m tall; lowland and hill forest to 900 m; Pk, Ph, Sl, NS, Jh.

133.7.9 **Dysoxylum dumosum** King, **FMP1** 392, **TFM4** 243, **FMi12** 99; bushy tree to 6 m tall; lowland and hill forest to 1000 m; Tg, Pk, Ph, Sl, Jh.

133.7.10 **Dysoxylum excelsum** Blume, **TFM4** 244, **FMi12** 109; *Dysoxylum macrothyrsum auct. non* Miq., **FMP1** 394 incl. var. *microbotrys* (King) Ridl.; *Dysoxylum turbinatum* King, **FMP1** 244; tree to 36 m tall; lowland to montane forest at 1300 m; Pk, Ph, Sl, Jh.

133.7.11 **Dysoxylum flavescens** Hiern, **FMP1** 396, **TFM4** 244, **FMi12** 128; tree to 33 m tall; lowland and hill forest to 800 m; Ph, Sl, NS, Ml, Sp.

133.7.12 **Dysoxylum grande** Hiern, **TFM4** 244, **FMi12** 117; *Dysoxylum interruptum* King, **FMP1** 392; *Dysoxylum corneri* M.R. Hend., **H35** 92; tree to 39 m tall; lowland and hill forest to 1300 m; Kd, Tg, Pk, Ph, Sl, NS, Jh.

133.7.13 **Dysoxylum macrocarpum** Blume, **TFM4** 244, **FMi12** 116; tree to 33 m tall; lowland and hill forest to 1200 m; Tg, Sl, Ph, Jh.

133.7.14 **Dysoxylum mollissimum** Blume, **TFM4** 245, **FMi12** 90; tree to 33 m tall; lowland and hill forest to 800 m; Tg, Sl.

133.7.15 **Dysoxylum papillosum** King, **FMP1** 397, **TFM4** 245, **FMi12** 116; tree to 6 m tall; lowland forest; Tg, Pk, Ph, Sl.

133.7.16 **Dysoxylum rigidum** (Ridl.) Mabb., **TFM4** 245, **FMi12** 105; tree to 30 m tall; lowland forest; Pk, Ph, Sl, Jh.

133.7.17 **Dysoxylum rugulosum** King, **FMP1** 397, **TFM4** 245, **FMi12** 127; *Dysoxylum undulatum* M.R. Hend., **H33** 90; tree to 20 m tall; lowland and hill forest; Pk, Ph, Sl, Ml.

133.8.1 **Heynea trijuga** Roxb. *ex* Sims, **FMP1** 413, **FMi12** 41; *Walsura tenuifolia* Ridl., **FMP1** 413; *Trichilia connaroides* (Wight & Arn.) Bentv., **TFM4** 251; tree to 8 m tall; lowland forests; Kd, Pn, Tg, Pk, Ph, Sl, NS.

133.9.1 **Lansium domesticum** Corrêa, **FMP1** 411, **TFM4** 246, **FMi12** 315; tree to 15 m tall; lowland forests, frequently cultivated; widespread.

133.10.1 **Munronia pinnata** (Wall.) W. Theob., **S59** 189, **TFM4** 202, **FMi12** 30; shrublet to 65 cm tall; on limestone cliffs near the sea; once from near Tanjong Rhu, P. Langkawi.

133.11.1 **Pseudoclausena chrysogyne** (Miq.) T.P. Clark, **C17** 291, **FMi12** 55; *Walsura chrysogyne* (Miq.) Bakh.*f.*, **TFM4** 254; *Walsura multijuga* King, **FMP1** 412; tree to 12 m tall; lowland and hill forest to 600 m; Kl, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

133.12.1 **Reinwardtiodendron cinereum** (Hiern) Mabb., **TFM4** 247, **FMi12** 324; *Lansium cinereum* Hiern, **FMP1** 411; tree to 27 m tall; lowland and hill forest to 700 m; Kd, Kl, Pk, Ph, Sl.

133.12.2 **Reinwardtiodendron humile** (Hassk.) Mabb., **TFM4** 249, **FMi12** 326; tree to 27 m tall; lowland and hill forest to 700 m; Kl, Tg.

133.13.1 **Sandoricum beccarianum** Baill., **TFM4** 249, **FMi12** 353; *Sandoricum emarginatum* Hiern, **FMP1** 385; tree to 35 m tall; lowland forest, often near the sea; Sl, Ph, Jh, Sp.

133.13.2 **Sandoricum koetjape** (Burm.*f.*) Merr., **TFM4** 249, **FMi12** 345; *Sandoricum indicum* Cav., **FMP1** 385; *Sandoricum maingayi* Hiern, **FMP1** 385; *Sandoricum nervosum* Blume, **FMP1** 385; tree to 45 m tall; lowland and hill forest, often cultivated; widespread.

133.14.1 **Toona ciliata** M. Roem.; **FMi12** 366; tree to 35 m tall; lowlands and hills to 1500 m; P. Langkawi, Pk.

133.14.2 **Toona calantas** Merr. & Rolfe; **FMi12** 370; tree; Ph, Sl; [status dubious, may be variety of *Toona ciliata*].

133.14.3 **Toona sinensis** (A. Juss.) M. Roem., **TFM4** 256, **FMi12** 360; tree to 36 m tall; hill and lower montane forest, 600–1200 m; Pk, Ph.

133.14.4 **Toona sureni** (Blume) Merr., **TFM4** 258, **FMi12** 363; *Cedrela febrifuga* Blume, **FMP1** 415; tree to 30 m tall; lowland and hill forest to 1200 m; Ps, P. Langkawi, Kd, Pn, Kl, Ph, Sl, Jh.

133.15.1 **Turraea breviflora** Ridl., **FMP1** 383, **TFM4** 252, **FMi12** 29; suckering shrubletto 1 m tall; lowland and hill forest; Sl, Jh, Sp; endemic.

133.16.1 **Walsura pinnata** Hassk., **TFM4** 254, **C17** 276, **FMi12** 48; *Walsura neurodes* Hiern, **FMP1** 412; *Napeodendron altissimum* Ridl., **FMP1** 505; tree to 20 m tall; lowland and hill forest to 600 m; Pk, Ph, Sl, Ml, Jh.

133.16.2 **Walsura robusta** Roxb., **C17** 259, **FMi12** 47; tree to 25 m tall; lowland forest; once from Taman Negara, Ph.

133.17.1 **Xylocarpus granatum** J. König, **TFM4** 260, **FMi12** 378; *Carapa moluccensis auct. non* Lam., **FMP1** 414; tree to 15 m tall; mangroves; all coasts.

133.17.2 **Xylocarpus moluccensis** (Lam.) M. Roem., **TFM4** 260, **FMi12** 376; *Carapa obovata auct. non* Blume, **FMP1** 414; tree to 18 m tall; mangroves; all coasts.

133.17.3 **Xylocarpus rumphii** (Kostel.) Mabb., **TFM4** 260, **FMi12** 375; tree to 12 m tall; rocky headlands; Kd, Pn, Ph, NS, Jh, Sp.

134. MELIOSMACEAE

134.1.1 **Meliosma lanceolata** Blume, **FMP1** 516, **TFM4** 427, **FMi10** 704; *Meliosma levis* King, **FMP1** 515; tree to 25 m tall; lowland to lower montane forest at 1500 m; widespread.

134.1.2 **Meliosma lepidota** Blume ssp. **dolichomischa** (Vidal) Beusekom, **TFM4** 428, **FMi10** 696; *Meliosma monophylla* Ridl., **FMP1** 514; tree to 15 m tall; montane forest at 1200–1500 m; Pk, Ph; endemic subspecies.

134.1.3a **Meliosma pinnata** (Roxb.) Maxim. ssp. **arnottiana** (Wight) Beusekom, **TFM4** 429, **FMi10** 709; tree to 20 m tall; montane forest; Tapah Hills, Pk, and Cameron Highlands, Ph.

134.1.3b **Meliosma pinnata** (Roxb.) Maxim. ssp. **ridleyi** (King) Beusekom, **TFM4** 429 incl. var. *elegans* (Ridl.) L.G. Saw, **FMi10** 710; *Meliosma ridleyi* King, **FMP1** 516; *Meliosma elegans* Ridl., **FMP1** 515; shrub or tree to 20 m tall; lowlands and mountains; Sl, Jh, Sp.

134.1.4 **Meliosma rufopilosa** M.R. Hend., **H33** 96, **TFM4** 429, **FMi10** 714; tree to 30 m tall; montane forest at 1350–1700 m; Cameron and Genting Highlands, Ph/Sl.

134.1.5 **Meliosma simplicifolia** (Roxb.) Walp. ssp. **fruticosa** (Blume) Beusekom, **TFM4** 429, **FMi10** 701; *Meliosma elliptica* Hook.*f*., **FMP1** 514; *Meliosma lancifolia* Hook.*f*., **FMP1** 514; shrub or tree to 20 m tall; lowland to mountains; Kd, Pn, Pk, Ph, Sl, Ml, Sp.

134.1.6 **Meliosma sumatrana** (Jack) Walp., **TFM4** 430, **FMi10** 702; *Meliosma nitida* Blume, **FMP1** 515; tree to 20 m tall; lowland to lower montane forest at 1500 m; widespread.

135. MENISPERMACEAE

135.1.1 **Albertisia crassa** Forman, **FMi10** 181; liana; lowland forest; once each from Ph and Sl; endemic.

135.1.2 **Albertisia megacarpa** Diels *ex* Forman, **FMi10** 181; large liana; montane forest at 1500–1600 m; twice from Cameron Highlands, Ph; endemic.

135.2.1 **Arcangelisia flava** (L.) Merr., **FMi10** 210; *Arcangelisia loureiri* (Pierre) Diels, **FMP1** 107; large liana; lowland forest; Pk.

135.3.1 **Cocculus orbiculatus** (L.) DC., **FMi10** 231; *Cocculus ovalifolius* (Vahl *ex* Pers.) DC., **FMP1** 110; *Cocculus elegans* (Ridl.) Ridl.; **FMP2** 111; slender liana; sandy shores; both coasts.

135.4.1 **Coscinium fenestratum** (Gaertn.) Colebr., **FMi10** 215; *Coscinium wallichianum* Miers, **FMP1** 106; *Coscinium blumeanum* (*non* Miers *ex* Hook.*f.* & Thomson) Miq., **FMP1** 106 in part; large liana; lowland forest; widespread.

135.4.2 **Coscinium blumeanum** Miers *ex* Hook.*f.* & Thomson, **FMP1** 106 in part, **FMi10** 216; large liana; lowland forest; Pn, P. Pangkor.

135.5.1 **Cyclea elegans** King, **FMP1** 115, **FMi10** 239; slender climbing shrub; hill forest; Pk.

135.5.2 **Cyclea laxiflora** Miers, **FMP1** 114, **FMi10** 241; slender climber to 15 m long; forest margins, lowlands to mountains at 1200 m; widespread and common.

135.6.1 **Diploclisia kunstleri** (King) Diels, **FMP1** 107, **FMi10** 230; large liana to 30 m long; lowland and hill forest; Pk, Ph, Jh.

135.7.1 **Fibraurea tinctoria** Lour., **FMi10** 207; *Fibraurea chloroleuca* Miers, **FMP1** 105; large liana to 40 m long; lowland forest and forest margins; widespread and common.

135.8.1 **Hypserpa nitida** Miers, **FMi10** 219; *Hypserpa cuspidata* (Hook.*f.* & Thomson) Miers, **FMP1** 111; scandent shrub; lowland forest margins; widespread.

135.9.1 **Limacia oblonga** Hook.*f.* & Thomson, **FMP1** 109, **FMi10** 223; liana to about 10 m tall; lowland and hill forest; Pn & Pk to Sp.

135.9.2 **Limacia scandens** Lour., **FMi10** 223; *Limacia velutina* Hook.*f.* & Thomson, **FMP1** 109; liana; lowland forest margins; Pn to Sp.

135.10.1 **Pericampylus glaucus** (Lam.) Merr., **FMi10** 229; *Pericampylus incanus* (Colebr.) Hook.*f.* & Thomson, **FMP1** 112; *Pericampylus membranaceus* Miers, **FMP1** 112; *Cissampelos pariera auct. non* L., **FMP1** 114; liana; lowland forest; widespread.

135.11.1 **Pycnarrhena lucida** (Teijsm. & Binn.) Miq., **FMi10** 174; *Pycnarrhena fasciculata* (Miers) Diels, **FMP1** 108; scandent shrub; lowland forest; Pk, Ml.

135.12.1 **Stephania capitata** (Blume) Spreng., **FMP1** 113, **FMi10** 252; slender liana to 15 m long; lowland and hill forest; Pk, Jh.

135.12.2 **Stephania corymbosa** (Blume) Walp., **FMP1** 113, **FMi10** 249; slender liana; montane forest; Maxwell's Hill, Pk.

135.12.3 **Stephania japonica** (Thunb.) Miers var. **discolor** (Blume) Forman, **FMi10** 248; *Stephania hernandiifolia* (Willd.) Walp., **FMP1** 113; tuberous vine to 10 m long; lowland and hill forest; Pn.

135.12.4 **Stephania venosa** (Blume) Spreng., **FMi10** 248; *Stephania rotunda* (*non* Lour.) Miq., **FMP1** 113; slender vine to 20 m long; open country, on limestone; Ps, P. Langkawi.

135.13.1 **Tiliacora triandra** (Colebr.) Diels, **FMP1** 110, **FMi10** 185; slender liana; lowland and hill forest; P. Langkawi, Kd, Pn, Tg (once each).

135.14.1 **Tinomiscium petiolare** Hook.*f.* & Thomson, **FMP1** 105, **FMi10** 205; large liana reaching 30 m; forest margins; widespread and common.

135.15.1 **Tinospora crispa** (L.) Hook.*f.* & Thomson, **FMP1** 103, **FMi10** 194; liana reaching to 15 m; waste ground, forest margins; widespread, possibly introduced.

135.15.2 **Tinospora glabra** (Burm.*f.*) Merr., **FMi10** 199; liana; lowland forest; Ps, Kl, Pk.

135.15.3 **Tinospora macrocarpa** Diels, **FMP1** 103, **FMi10** 198; scandent shrub; lowland forest; Pn, Sl, Ml, Sp.

136. MENYANTHACEAE

136.1.1 **Nymphoides aurantiaca** (Dalzell) Kuntze, **C32** 211; *Villarsia aurantiaca* Ridl. *ex* C.B. Clarke, **FMP2** 435; small stoloniferous herb; shallow water; once each from P. Langkawi and Ph.

136.1.2 **Nymphoides indica** (L.) Kuntze, **C32** 207, **M47** 296; *Limnanthemum indicum* (L.) Griseb., **FMP2** 436; aquatic herb with floating leaves; ponds, ditches; widespread.

136.1.3 **Nymphoides parvifolia** (Griseb.) Kuntze, **C32** 210; *Limnanthemum parvifolium* Griseb., **FMP2** 436; small aquatic herb with floating leaves; ponds; scattered.

137. MOLLUGINACEAE

137.1.1 **Glinus oppositifolius** (L.) A. DC., **FMi4** 270, **M47** 360; *Glinus mollugo* Fenzl, **FMP1** 867; herb to 45 cm tall; open sandy places; Kl, Ph.

137.2.1 **Mollugo pentaphylla** L., **FMP1** 867, **FMi4** 268, **M47** 362; herb to 30 cm tall; sandy places, waste ground; widespread.

138. MONIMIACEAE

138.1.1 **Kibara coriacea** (Blume) Tul., **FMP3** 75, **FMi10** 298, **TFM4** 261; *Kibara chartacea* Blume, **FMP3** 74; *Kibara serrulata* Perkins, **FMP3** 75; shrub or small tree to 13 m tall; lowland and hill forest to 1000 m; Pn, Tg, Pk, Ph, Sl, NS, Ml, Jh, Sp.

138.2.1 **Matthaea sancta** Blume, **FMP3** 73, **FMi10** 323, **TFM4** 263; shrub or small tree to 7 m tall; lowland and hill forest to 1000 m; Pk, Ph, Sl, Jh, Sp.